This document provides pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.16 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia Water Quality Standards (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained within this permit will maintain the Water Quality Standards of 9VAC25-260 et seq.

1.	Facility Name and Mailing Address:	Town of Hamilton Sewage Treatment Plant P.O. Box 130, Hamilton, VA 20159	SIC Code:	4952 WWTP
	Facility Location:	104 North Rogers Street Hamilton, VA 20159	County:	Loudoun
	Facility Contact Name:	J. Scott Englund	Telephone Number:	(540) 338-2811
	Facility Email Address:	scott@town.hamilton.va.us		
2.	Permit No.:	VA0020974	Expiration Date:	9/20/2016
	Other VPDES Permits:	NA		
	Other Permits:	NA		
	E2/E3/E4 Status:	NA		
3.	Owner Name:	Town of Hamilton		
	Owner Contact / Title:	David Simpson, Mayor	Telephone Number:	(540) 338-2811
	Owner Email Address:	drs755@gmail.com		
4.	Application Complete Date:	March 1, 2016		
	Permit Drafted By:	Caitlin Shipman	Date Drafted:	May 11, 2016
	Draft Permit Reviewed By:	Douglas Frasier	Date Reviewed:	May 16, 2016
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	May 27, 2016
	Public Comment Period :	Start Date: June 30, 2016	End Date:	July 29, 2016

5. Receiving Waters Information:

Receiving Stream Name:	South Fork Catoctin Creek, UT	Stream Code:	1aXBL
Drainage Area at Outfall:	0.40 square miles	River Mile:	1.71
Stream Basin:	Potomac River	Subbasin:	Potomac River
Section:	10b	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-A02R; PL02
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.0 MGD
Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD

It is staff's professional judgement that when a drainage area is 5 square miles or less, critical flows will be equal to 0.0 MGD.

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

X	State Water Control Law	X	EPA Guidelines
X	Clean Water Act	X	Water Quality Standards
X	VPDES Permit Regulation		Other (PES, Occoquan Policy, Dulles)
X	EPA NPDES Regulation		(GP – note regulation and title)

7. **Licensed Operator Requirements:** Class III

8. **Reliability Class:** Class I

9. **Facility / Permit Characterization:**

___	Private	X	Effluent Limited	___	Possible Interstate Effect
___	Federal	X	Water Quality Limited	___	Compliance Schedule
___	State	___	Whole Effluent Toxicity Program	___	Interim Limits in Permit
X	POTW	___	Pretreatment Program	___	Interim Limits in Other Document
X	eDMR Participant	X	Total Maximum Daily Load (TMDL)		

10. **Wastewater Sources and Treatment Description:**

The Town of Hamilton Sewage Treatment Plant is a secondary treatment facility. The facility is fed by three pump stations as well as gravity lines. Wastewater enters the headworks through a grit chamber and comminutor. Flow is then split between three aeration basins. Flow from the aeration basins is routed to one of two secondary clarifiers; each clarifier can treat 0.08 MGD. Aeration basin number one directly enters one of the two secondary clarifiers, while aeration basin number two enters an additional aeration basin before entering secondary clarification.

After clarification, flow is directed to the ultraviolet (UV) disinfection unit. The UV facility consists of four banks operating in series with each bank containing three lamps. Flow is then directed to post aeration. Final effluent is discharged through Outfall 001 to an unnamed tributary to South Fork Catoctin Creek.

The facility received a Certificate to Operate for the Chemical Handling and Equipment Project on May 19, 2009. The chemical handling and treatment facility was completed as part of the Copper Study and Control Plan which was developed to address the exceedance of effluent limits for Total Copper. See Section 27 for additional information.

Generators serve the facility and the pump stations. Two of the pump stations have individual generators; the third pump station is connected to the same generator as the facility. The facility's generator is capable of powering the entire plant, turns on automatically if there is a power failure, and has an alarm system to alert the operator on call. The response time from the operators is approximately 15-30 minutes.

See **Attachment 1** for a facility schematic/diagram.

TABLE 1
OUTFALL DESCRIPTION

Number	Discharge Sources	Treatment	Design Flow	Latitude / Longitude
001	Domestic and/or Commercial Wastewater	See Section 10	0.16 MGD	39° 08′ 20″ 77° 39′ 47″
See **Attachment 2** for the Purcellville (DEQ 215B) topographic map.				

11. **Sludge Treatment and Disposal Methods:**

According to the Town of Hamilton's Sludge Management Plan, received October 11, 2011, solids that are manually removed from the grit chamber and communitor are kept in a covered container until they are disposed at the Loudoun County Landfill. Lime is blended into the material as needed to prevent nuisance odors.

Solids from the secondary clarifiers are wasted to the aerobic digester. After digestion, the solids are dewatered though a belt press. According to the permit application, the primary method of sludge disposal is shipment off site to Broad Run Water Reclamation Facility (VA0091383). If Broad Run Water Reclamation Facility is unable to accept Hamilton Sewage Treatment Plant's sludge, it will be placed in the Loudoun County Landfill.

12. Other Permitted Discharges Located Within Waterbody VAN-A02R:

TABLE 2
PERMITTED DISCHARGES LOCATED WITHIN WATERBODY VAN-A02R

ID / Permit Number	Facility Name	Type	Receiving Stream
VA0060500	Waterford Sewage Treatment Plant	VPDES Individual	South Fork Catoctin Creek
VA0089940	Purcellville Town Water Treatment Plant	VPDES Individual	
VAG406539	Price David Residence	Small Municipals <1,000 GPD	North Fork Catoctin Creek
VAG406175	Zurschmeide Steve Residence		Catoctin Creek - UT
VAG406106	Neersville Volunteer Fire and Rescue		Piney Run
VAG406118	White Christopher Residence		South Fork Catoctin Creek, UT
VAG406168	Mohammad Mirzaie Vahid Residence		
VAG406086	Smith Steven D Residence		North Fork Catoctin Creek
VAG406103	Biraben Roger Residence		North Fork Catoctin Creek, UT
VAG406477	Hillsboro Pub		
VAG110121	Virginia Concrete Company Inc - Purcellville	Concrete	South Fork Catoctin Creek
1aSOC000.01	DEQ Monitoring Station	Biological	Upstream from confluence with North Fork Catoctin Creek
1aSOC001.66		Ambient	Route 698
1aSOC005.46			Route 9

13. Material Storage:

TABLE 3
MATERIAL STORAGE

Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Caustic Soda	1-5 55 gallon barrels	Materials are stored in a shed with a concrete floor that drains to a containment area.
Metal Precipitate	1-2 55 gallon barrels	
Lime Hydrate	2-12 50 lb bags	

14. Site Inspection:

Performed by DEQ-NRO Water Compliance staff, Lisa Janovsky, on January 6, 2016 (see **Attachment 3**). A follow up site inspection was performed by DEQ-NRO Water Compliance staff, Lisa Janovsky, and DEQ-NRO Water Permitting Staff, Caitlin Shipman and Douglas Frasier, May 10, 2016.

15. Receiving Stream Water Quality and Water Quality Standards:

a. Ambient Water Quality Data

This facility discharges to an unnamed tributary to South Fork Catoctin Creek (streamcode XBL) that has been neither monitored nor assessed. The nearest DEQ monitoring station is ambient monitoring station 1ASOC005.46, which is located approximately 2.4 miles downstream from Outfall 001. The following is the water quality summary for this segment of South Fork Catoctin Creek, as taken from the draft 2014 Integrated Report:

Class III, Section 10b.

DEQ monitoring stations located on this segment of South Fork Catoctin Creek:

- Biological monitoring station 1aSOC000.01, upstream from the confluence with North Fork Catoctin Creek.
- Ambient monitoring station 1aSOC001.66, at Route 698.
- Ambient monitoring station 1aSOC005.46, at Route 9.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. The *E. coli* data collected by the citizen monitoring group indicate that a water quality issue may exist for the recreation use; however, the methodology and/or data quality has not been approved for such a determination. A fecal coliform TMDL for the South Fork Catoctin Creek watershed has been completed and approved.

Biological and associated chemical monitoring finds this segment to be supporting the aquatic life use. Citizen monitoring indicates a low probability of adverse conditions for biota. The wildlife use is considered fully supporting. The fish consumption use was not assessed.

b. 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

TABLE 4.
INFORMATION ON DOWNSTREAM 303(D) IMPAIRMENTS AND TMDLS

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the Draft 2014 Integrated Report							
South Fork Catoctin Creek	Recreation	*E. coli*	1.7 miles	Catoctin Creek Bacteria TMDL 5/31/2002		200 cfu/100 ml fecal coliform 126 cfu/100 ml *E. coli** --- 0.16 MGD	---

* The WLA is expressed in the Catoctin Creek Bacteria TMDL as cfu/year fecal coliform bacteria.

This facility discharges to an unnamed tributary of the South Fork Catoctin Creek within the Chesapeake Bay watershed. The receiving stream has been identified in the Chesapeake Bay TMDL; approved by the Environmental Protection Agency (EPA) on December 29, 2010. The TMDL addresses dissolved oxygen (DO), chlorophyll a and submerged aquatic vegetation (SAV) impairments in the main stem Chesapeake Bay and its tributaries by establishing nonpoint source load allocations (LAs) and point source wasteload allocations (WLAs) for total nitrogen (TN), total phosphorus (TP) and total suspended solids (TSS) to meet applicable Virginia Water Quality Standards contained in 9VAC25-260-185.

Implementation of the Chesapeake Bay TDML is currently accomplished in accordance with the Commonwealth of Virginia's Phase I Watershed Implementation Plan (WIP); approved by EPA on December 29, 2010. The approved WIP recognizes the *General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed of Virginia* (9VAC25-820 et seq.) as controlling the nutrient allocations for non-significant Chesapeake Bay dischargers. The approved WIP states that for non-significant municipal facilities, nutrient WLAs are to be consistent with Code of Virginia procedures, which set baseline WLAs at 2005 permitted design capacity nutrient load levels. In accordance with the WIP, TN and TP WLAs for non-significant facilities are considered aggregate allocations and will not be included in individual permits. The WIP also considers TSS WLAs for non-significant facilities to be aggregate allocations; however, TSS limits are to be included in individual VPDES permits in conformance with the technology-based requirements found in the Clean Water Act. Furthermore, the WIP recognizes that so long as the aggregated TSS permitted loads for all dischargers is less than the aggregated TSS load in the WIP, the individual permit will be consistent with the TMDL.

40 CFR 122.44(d)(1)(vii)(B) requires permits to be written with effluent limits necessary to meet water quality standards and to be consistent with the assumptions and requirements of applicable WLAs. This facility is classified as a non-significant Chesapeake Bay discharger and has not made application for a new or expanded discharge since 2005. It is therefore covered

by rule under the 9VAC25-820 regulation. In accordance with the WIP, TN and TP load limits are not included in this individual permit, but are consistent with the TMDL because the current nutrient loads are in conformance with the facility's 2005 permitted design capacity loads. This individual permit includes weekly average TSS limits of 20 mg/L that are in conformance with technology-based requirements and, in turn, are consistent with the Chesapeake Bay TMDL.

In addition, this individual permit contains limits for ammonia, BOD_5 and dissolved oxygen which provide protection of instream DO concentrations of at least 5.0 mg/L. Furthermore, implementation of the full Chesapeake Bay WIP, including GP reductions combined with actions proposed in other source sectors, is expected to adequately address ambient conditions such that the proposed effluent limits found within this individual permit are consistent with the Chesapeake Bay TMDL and will not cause an impairment or observed violation of the standards for DO, chlorophyll a or SAV as required by 9VAC25-260-185.

The full planning statement is found in **Attachment 4**.

c. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, an unnamed tributary to South Fork Catoctin Creek, is located within Section 10b of the Potomac River Basin and classified as Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32° C and maintain a pH of 6.0 – 9.0 standard units (S.U.).

The Freshwater Water Quality/Wasteload Allocation Analysis located in **Attachment 5** details other water quality criteria applicable to the receiving stream.

Some Water Quality Criteria are dependent on the pH, temperature and total hardness of the receiving stream and/or final effluent. These values were utilized to determine the criterion found in **Attachment 5** for the following pollutants: Ammonia and Copper.

pH and Temperature for Ammonia Criteria

The fresh water, aquatic life Water Quality Criteria for ammonia is dependent on the instream pH and temperature. Since the effluent may have an impact on the instream values, the pH and temperature values of the effluent must also be considered when determining the ammonia criteria for the receiving stream. The 90th percentile pH and temperature values are utilized because they best represent the critical conditions of the receiving stream.

The critical 30Q10 and 1Q10 flows of the receiving stream have been determined to be 0.0 MGD. In cases such as this, effluent pH and temperature data may be utilized to establish the ammonia water quality criteria.

For the effluent, a default temperature value of 25° C and an assumed temperature value of 15° C for summer and winter, respectively, were utilized since effluent temperature data were not readily available. According to the Discharge Monitoring Reports (DMRs) from November 2011 – January 2016, the 90^{th} percentile maximum pH value is 7.6 S.U. and the 10^{th} percentile maximum pH value is 7.1 S.U. The ammonia water quality criteria are shown in **Attachment 5**, the ammonia limit calculations are shown in **Attachment 6**.

Hardness Dependent Metals Criteria

The Water Quality Criteria for some metals are dependent on the receiving stream and/or effluent total hardness values (expressed as mg/L calcium carbonate).

Monitoring from January 1997 through November 1999 shows an average effluent hardness of 109 mg/L $CaCO_3$. The hardness dependent metals criteria in **Attachment 5** are based on these values.

Bacteria Criteria

The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli per 100 mL of water shall not exceed the following:

	Geometric Mean[1]
Freshwater *E. coli* (N/100 mL)	126

[1]For a minimum of four weekly samples taken during any calendar month

d. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, unnamed tributary to South Fork Catoctin Creek, is located within Section 10b of the Potomac River Basin. This section has not been designated with a special standard.

e. Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on March 3, 2016 for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species and species of concern were identified within a 3 mile radius of the discharge: Dwarf Wedgemussel *(Alasmidonta heterondon)*, Northern Long-Eared Bat *(Myotis septentrionalis)*, Brook Floater *(Alasmidonta varicose)*, Wood Turtle *(Glyptemys insculpta)*, Peregrine Falcon *(Falco peregrines)*, Upland Sandpiper *(Bartramia longicauda)*, Loggerhead Shrike *(Lanius ludovicianus)*, Henslow's Sparrow *(Ammodramus henslowii)*, Green Floater *(Lasmigona subviridis)*, Migrant Loggerhead Shrike *(Lanius ludovicianus migrans)*, Regal Fritillary *(Speyeria idalia idalia)*, Bald Eagle *(Haliaeetus leucocephalus)*, Dotted Skipper *(Hesperia attalus slossonae)*, Yellow Lance *(Elliptio lanceolata)*, Spotted Turtle (*Clemmys guttata)*, Timber Rattlesnake *(Crotalus horridus)*.

The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and protect threatened and endangered species found near the discharge.

DCR, FWS, and DGIF did not request coordination on this permit.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

It is staff's professional judgement that the receiving stream be classified as Tier I based on the following: (1) the stream critical flows have been determined to be zero; and (2) at times the stream flow may be comprised of only effluent.

The proposed permit limits have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical 7Q10, 1Q10 and 30Q10 flows have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a. Effluent Screening

Effluent data obtained from permit application and Discharge Monitoring Reports (DMRs) submitted during the last permitting term has been reviewed and determined to be suitable for evaluation. Please see **Attachment 7** for a summary of effluent data.

The following pollutants require a wasteload allocation analysis: Ammonia and Copper.

b. Mixing Zones and Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o[Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- Q_s = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria, harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- C_s = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 has been determined to have critical 7Q10, 1Q10 and 30Q10 flows of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c. Effluent Limitations, Outfall 001 – Toxic Pollutants

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N

Staff reevaluated pH and temperature and has concluded it is significantly different than what was used previously to derive ammonia criteria. As result, staff used the new data to determine new ammonia water quality criteria, new wasteload allocations (WLAs) and new ammonia limits (**Attachment 6**). DEQ guidance suggests using a sole data point of 9.0 mg/L to ensure the evaluation adequately addresses the potential ammonia in a discharge containing domestic sewage.

Reasonable potential analysis of ammonia suggests a monthly average limit of 1.6 mg/L and a weekly average limit of 2.2 mg/L. It is staff's professional judgment that backsliding is not warranted. The current monthly and weekly average limit, respectively 1.3 mg/L and 2.4 mg/L, will be carried forward with this reissuance.

The Environmental Protection Agency (EPA) finalized new, more stringent ammonia criteria in August 2013; possibly resulting in significant reductions in ammonia effluent limitations. It is staff's professional judgment that the incorporation of those criteria into the Virginia Water Quality Standards is forthcoming. This and many other facilities may be required to comply with these new criteria during their next respective permit terms. The ammonia criteria will be revisited during the next reissuance.

2) Metals/Organics

During the last permit reissuance, the reasonable potential analysis of total recoverable copper determined a monthly and weekly limit of 15 µg/L was needed to replace the current limit of 19 µg/L. For this permitting term, the reasonable potential analysis of total recoverable copper suggests a monthly and weekly average limit of 13 µg/L. See **Attachment 5** for WLA and **Attachment 8** for a derivation of the limits.

d. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD_5), and pH limitations are proposed.

Dissolved oxygen and BOD_5 limitations are based on the stream modeling conducted in November 1988 (**Attachment 9**) and are set to meet the water quality criteria for D.O. in the receiving stream. The 1988 model was conducted to address the facility's request for an increase in flow from 0.08 MGD to 0.16 MGD. Since 1988, there has been no request to increase flow, no change in the facility's operations, and no noted downstream impairments. Therefore, it is staff's professional judgment that the model does not need to be ran at this time.

It is staff's practice to equate the total suspended solids limits with the BOD_5 limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

It is staff's professional judgment that total hardness monitoring be included in this reissuance.

e. Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. Only concentration limits are now found in the individual VPDES permit when the facility installs nutrient removal technology. The basis for the concentration limits is 9VAC25-40 – *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* which requires new or expanding discharges with design flows of $\geq$ 0.04 MGD to treat for TN and TP to either BNR (Biological Nutrient Removal) levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA (State of the Art) levels (TN = 3.0 mg/L and TP = 0.3 mg/L).

Annual monitoring for nitrates + nitrites, total Kjeldahl nitrogen, total nitrogen, and total phosphorus are included in this permit. The monitoring is needed to protect the Chesapeake Bay Water Quality Standards and verify assumptions made while developing the Watershed Implementation Plan (WIP) for the Chesapeake Bay TMDL.

f. Effluent Limitations and Monitoring Summary

The effluent limitations are presented in Section 19. Limits were established for biochemical oxygen demand-5 day (BOD_5), total suspended solids (TSS), ammonia as N, pH, dissolved oxygen (D.O.), and total recoverable copper. Monitoring is included for total Kjeldahl nitrogen (TKN), nitrates+nitrites, total nitrogen, total phosphorus, and total hardness.

The limit for total suspended solids and monitoring for total hardness is based on Professional Judgment.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and then a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

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19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.16 MGD.
Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	1	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5	1,3	20 mg/L 12 kg/day	30 mg/L 18 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS)	2,3	20 mg/L 12 kg/day	30 mg/L 18 kg/day	NA	NA	3D/W	8H-C
Dissolved Oxygen (DO)	1,3	NA	NA	6.0 mg/L	NA	1/D	Grab
E. coli (Geometric Mean) [a]	1,6	126 n/100mL	NA	NA	NA	3D/W	Grab
Ammonia, as N	1,3	1.3 mg/L	2.4 mg/L	NA	NA	3D/W	8H-C
Total Kjeldahl Nitrogen (TKN)	4,5	NL mg/L	NA	NA	NA	1/YR	8H-C
Nitrate+Nitrite, as N	4,5	NL mg/L	NA	NA	NA	1/YR	8H-C
Total Nitrogen [b c.]	4,5	NL mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus [c]	4,5	NL mg/L	NA	NA	NA	1/YR	8H-C
Copper, Total Recoverable	1	13 µg/L	13 µg/L	NA	NA	1/M	Grab
Total Hardness (as $CaCO_3$)	2	NL mg/L	NA	NA	NA	1/3M [c]	Grab

The basis for the limitations codes are:

1. Water Quality Standards
2. Professional Judgment
3. Stream Model – Attachment 9
4. GM 14-2011
5. Chesapeake Bay TMDL/WIP
6. South Fork Catoctin Creek Bacteria TMDL

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.
3D/W = Three days per week.
1/M = Once every month.
1/3M = Once every three months
1/YR = Once every calendar year.

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15 minutes.

a. Samples shall be collected between 10:00 a.m. and 4:00 p.m.

b. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite.

c. 1/3M monitoring periods shall be January through March, April through June, July through September, and October through December The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

20. Other Permit Requirements:

a. Part I.B. of the Permit Contains Quantification Levels and Compliance Reporting Instructions.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an instream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

a. 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.

b. Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200.B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c. O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d. CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct (CTC) prior to commencing construction and to obtain a Certificate to Operate (CTO) prior to commencing operation of the treatment works.

e. Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200.C., and by the Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator.

f. Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of I based on residential areas immediately downstream and the potential for human contact.

g. Water Quality Criteria Reopener. The VPDES Permit Regulation at 9VAC25-31-220.D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

h. Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

i. Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2, and 420 through 720 and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

j. Nutrient Reopener. 9VAC25-40-70.A. authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

9VAC25-31-390.A. authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

k. Inflow and Infiltration (I&). 9VAC25-31-10 defines treatment works as any devices and systems used for the storage, treatment, recycling or reclamation of sewage or liquid industrial waste, or other waste or necessary to recycle or reuse water, including intercepting sewers, outfall sewers, sewage collection systems, individual systems, pumping, power and other equipment and their appurtenances.

9VAC25-31-190.E states that the permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. At the technical inspection on January 6, 2016 (see **Attachment 3**), it wat noted that the plant has experience 0.25 MGD flows during a 1.1" rainfall event. The Town of Hamilton will be required to develop and fund a program that ensures regular maintenance and necessary rehabilitation of the sanitary sewer collection system; adequately conveying sanitary waste while concurrently addressing I&I.

l. Total Maximum Daily Load (TMDL) Reopener. Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream.

22. Permit Section Part II.

Required by VPDES Regulation 9VAC25-31-190, Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a. Special Conditions:

1. Reliability Class. With this reissuance, Virginia Department of Health recommended a Reliability Class I for this facility based on the potential for human contact due to a subdivision immediately downstream.

2. Inflow and Infiltration. The language for the I&I special condition has been updated with this reissuance.

b. Monitoring and Effluent Limitations:

1. The drainage area for the receiving stream has been updated from 1.75 square miles to 0.40 square miles.

2. Monitoring for total Kjeldahl nitrogen (TKN), nitrate + nitrites, total nitrogen, and total phosphorus was included with this reissuance. Basis for nutrient monitoring is stated in Section 17.e.

3. Total Hardness monitoring is included with this reissuance.

4. Total Recoverable Copper limit has been updated from 15 µg/L to 13 µg/L.

24. Variances/Alternate Limits or Conditions:

Not applicable.

25. Public Notice Information:

First Public Notice Date: June 29, 2016 Second Public Notice Date: July 6, 2016

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office; 13901 Crown Court; Woodbridge, VA 22193; Telephone No. 703-583-3859, caitlin.shipman@deq.virginia.gov. See **Attachment 10** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address and telephone number of the writer and of all persons

represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. Additional Comments:

Previous Board Action(s):	A Special Order by Consent between DEQ and the Town of Hamilton became effective March 17, 2006. This Order addressed permit and regulation violations including failing to submit a new application for a permit 180 days before expiration of the existing permit, operating a UV system without a Certificate to Operate, and exceeding permit limits for Total Copper. An Amendment to Special Order by Consent between DEQ and the Town of Hamilton became effective April 27, 2009, and superseded the March 2006 Order. The amended Order continued to address permit limit violations as well as hydraulic overloading of the Sewage Treatment Plant. The Amendment to Special Order by Consent was terminated on December 26, 2012. The facility was referred to Enforcement on September 14, 2010 for exceeding Total Recoverable Copper and Ammonia limits and for issues with the reliability of data submitted with DMRs. The facility underwent new management and was brought back into compliance. The Town of Hamilton was dereferred on March 8, 2013.
Staff Comments:	No comments.
State/Federal Agency Comments:	Virginia Department of Health (VDH) recommended a Reliability Class I for this facility. The recommendation was based on general public health protection concerns related to the presence of significant residential development immediately downstream of the discharge point and the potential for human contact. The facility had no objections to changing to a Reliability Class I with this reissuance.
Public Comments:	None.
Owner Comments:	None.

Town of Hamilton Sewage Treatment Plant (VA0020974)
Fact Sheet Attachments:

Attachment 1 – Facility Diagram

Attachment 2 – Topographic Map

Attachment 3 – Site Inspection

Attachment 4 – Planning Statement

Attachment 5 – Water Quality Criteria/Wasteload Allocation Analysis (MSTRANTI Spreadsheet)

Attachment 6 – Ammonia Limit Calculations (STATS)

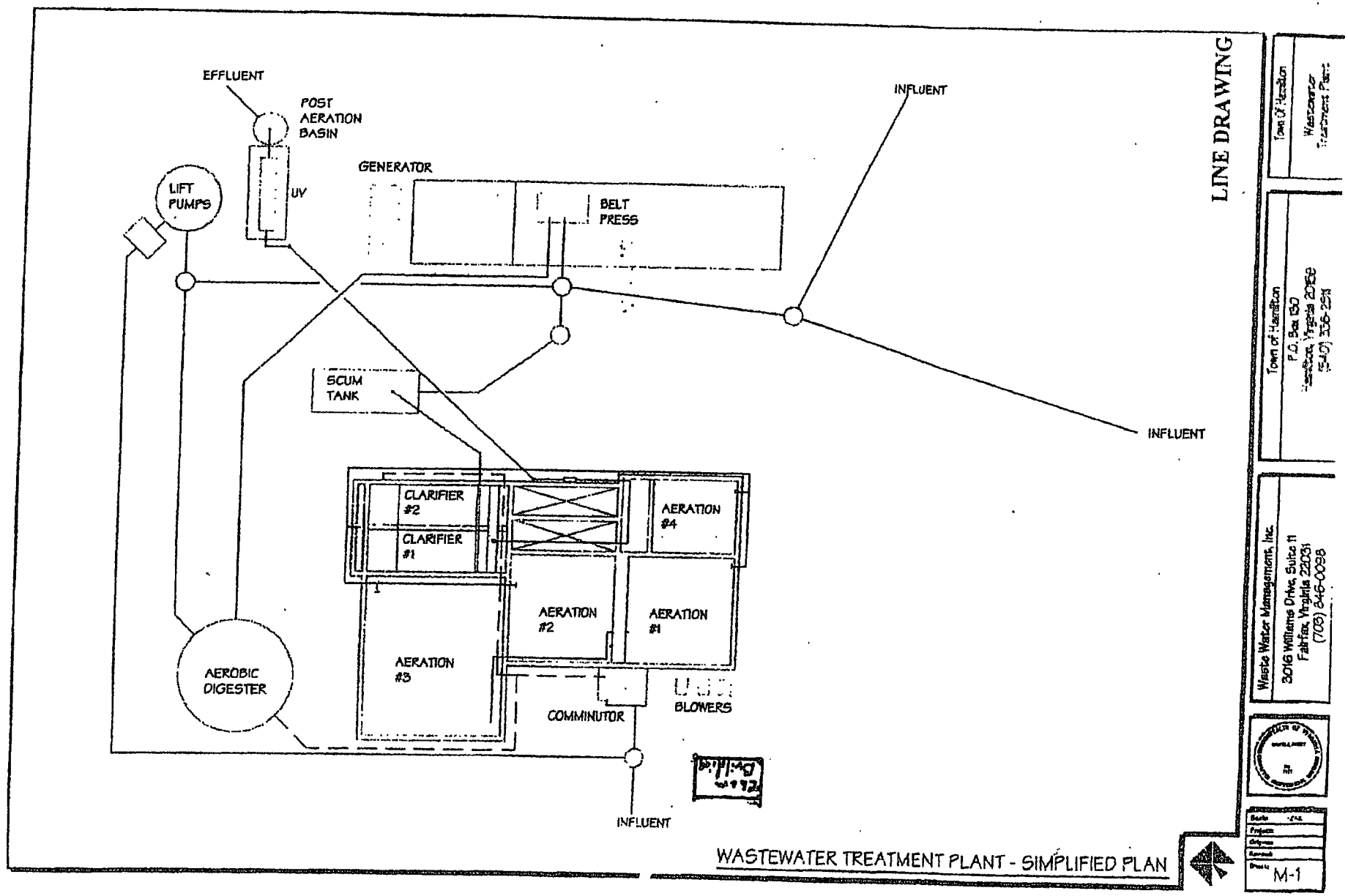
Attachment 7 – Summary of Effluent Data

Attachment 8 – Copper Limit Calculations (STATS)

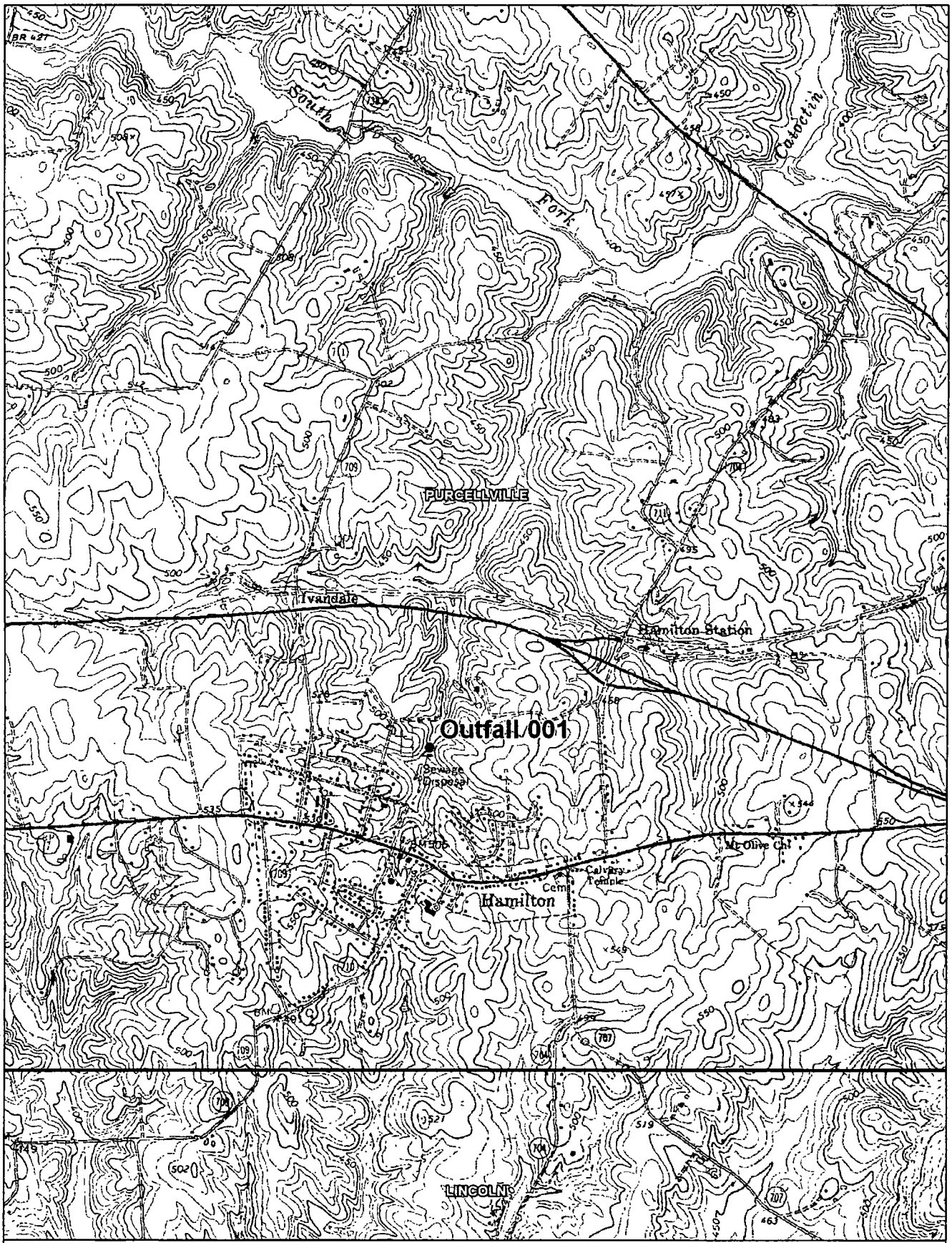
Attachment 9 – Dissolved Oxygen Model

Attachment 10 – Public Notice

Attachment 1 – Facility Diagram


LINE DRAWING
EFFLUENT
POST AERATION BASIN
UV
LIFT PUMPS
GENERATOR
BELT PRESS
INFLUENT
INFLUENT
SCUM TANK
CLARIFIER #2
CLARIFIER #1
AERATION #4
AERATION #2
AERATION #1
AERATION #3
AEROBIC DIGESTER
COMMINUTOR
BLOWERS
INFLUENT
WASTEWATER TREATMENT PLANT - SIMPLIFIED PLAN
Town of Hamilton
Wastewater Treatment Plant
Town of Hamilton
P.O. Box 150
Hamilton, Virginia 20158
(540) 338-2511
Waste Water Management, Inc.
3016 Williams Drive, Suite 11
Fairfax, Virginia 22031
(703) 846-0038
M-1

Attachment 2 – Topographic Map



Attachment 3 – Site Inspection

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193

(703) 583-3800

www.deq.virginia.gov

David K Paylor
Director

Molly Joseph Ward
Secretary of Natural Resources

Thomas A Faha
Regional Director

February 5, 2016

The Honorable Greg Wilmoth
Mayor – Town of Hamilton
P.O. Box 130
Hamilton, VA 22068

Re: **Town of Hamilton STP – Permit VA0020974 Technical and Laboratory Inspection**

Dear Mr. Wilmoth

Attached is a copy of the Inspection Report generated while conducting a Facility Technical Inspection at Town of Hamilton – Sewage Treatment Plant (STP) on January 6, 2016. This letter is not intended as a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* (APA).

Please note the requirements and recommendations addressed in the technical summary, and submit in writing, a progress report to this office by March 5, 2016. Your response may be sent either via the US Postal Service or electronically, via E-mail. If you choose to send your response electronically, we recommend sending it as an Acrobat PDF or in a Word-compatible, write-protected format. Additional inspections may be conducted to confirm the facility is in compliance with permit requirements.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Regional Office at (703) 583-3801 or by E-mail at Lisa.Janovsky@deq.virginia.gov.

Lisa H Janovsky

Lisa Janovsky
Environmental Specialist II

cc: Permit/DMR File;
Water Compliance Manager

DEQ
WASTEWATER FACILITY INSPECTION REPORT
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0077411	**09/21/2011**		**09/20/2016**

Facility Name	Address	Telephone Number
Town of Hamilton STP	**104 North Rogers Street Hamilton, VA 20159**	**540-338-2811**
Owner Name	Address	Telephone Number
Town of Hamilton	**P.O. Box 130 Hamilton, VA 20159**	**540-338-2811**
Responsible Official	Title	Telephone Number
Greg K. Wilmoth	**Mayor**	**540-338-2811**
Responsible Operator	Operator Cert. Class/number	Telephone Number
Les Morefield	**Class I / 1965005477**	**540-338-2811**

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal	X	Minor	X	Minor		Secondary	

INFLUENT CHARACTERISTICS:	DESIGN:
Flow	**0.16 MGD**
Connections Served	**601**

EFFLUENT LIMITS: mg/L unless otherwise noted. **STP OUTFALL 001 – 0.16 MGD**

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
Flow	**NL**	**NA**	**NL**	**pH (S.U.)**	**6.0**		**9.0**
BOD_5		**20**	**30**	**TSS**		**20**	**30**
D.O.	**6.0**			**Ammonia as N**		**1.3**	**2.4**
E.coli (n/100 mLs)		**126**		**Copper, Total Recoverable**		**15 ug/L**	**15 ug/L**

Receiving Stream	**Catoctin Creek, South Fork, UT**
Basin	**Potomac River**
Discharge Point (LONG)	**77° 39' 47" W**
Discharge Point (LAT)	**39° 08' 20" N**

DEQ
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date: **January 6, 3016**

Date form completed: **January 27, 2016**

Inspection by: **Lisa Janovsky**

Inspection agency: **DEQ-NRO**

Total Time Spent: **30 hrs**

Announced: **No**

Reviewed by:

Scheduled: **Yes**

Present at inspection: **Amy Dooley – DEQ, Les Morefield & Scott Englund – Town of Hamilton**

TYPE OF FACILITY:

	Domestic	**Industrial**	
[ ] Federal	[ ] Major	[ ] Major	[ ] Primary
[X] Nonfederal	[X] Minor	[ ] Minor	[ ] Secondary

Type of inspection:

[X] Routine
[ ] Compliance/Assistance/Complaint
[ ] Re-inspection

Date of last inspection: **July 14, 2008**
Agency: **DEQ**

Last Month Average**: December 2015**

Flow	**0.13**	MGD	pH, min-max	**6.2-7.0**	S.U.	BOD_5	**2.0**	mg/L
TSS	**2.9**	mg/L	DO	**7.5**	mg/L	E.Coli	**10**	n/100mLs
Ammonia, as N	**0.58**	mg/L	Copper, Total R	**7.1**	ug/L			

3 Month Average: October, November, December 2015

Flow	**0.11**	MGD	pH	**6.1-7.0**	S.U.	BOD_5	**4.1**	mg/L
TSS	**6.4**	mg/L	DO	**7.9**	mg/L	E.Coli	**10**	n/100mLs
Ammonia, as N	**0.29**	mg/L	Copper, Total R	**10.3**	ug/L			

DATA VERIFIED IN PREFACE [X] Updated [ ] No changes

Has there been any new construction? [X] Yes [ ] No

If yes, were plans and specifications approved? [X]Yes [ ]No [ ]NA

DEQ approval date: **May 19, 2009**

- **The facility received a Certificate to Operate for the Chemical Handling and Equipment Project. This was completed as part of the Copper Study and Control plan.**

((A) PLANT OPERATION AND MAINTENANCE (Outfall 001)

1. Class and number of licensed operators:	I - **1**, II - **1**, III - **0**, IV - **0**, Trainee - **0**		
2. Hours per day plant is manned:	**7 days/week, 7am-3pm**		
3. Describe adequacy of staffing.	[ ] Good	[X] Average	[ ] Poor
4. Does the plant have an established program for training personnel?	[X]Yes	[ ] No	
5. Describe the adequacy of the training program.	[ ] Good	[X] Average	[ ] Poor
6. Are preventive maintenance tasks scheduled?	[X]Yes	[ ] No	
7. Describe the adequacy of maintenance.	[X] Good	[ ] Average	[ ] Poor*
8. Does the plant experience any organic/hydraulic overloading? If yes, identify cause and impact on plant:	[X] Yes	[ ] No	
9. Any bypassing since last inspection?	[ ] Yes	[X] No	
10. Is the standby electric generator operational?	[X] Yes	[ ] No*	[ ] NA
11. Is the STP alarm system operational?	[X] Yes	[ ] No*	[ ] NA

12. How often is the standby generator exercised? **Every Tuesday under full load**
Power Transfer Switch? **N/A** Alarm System? **Daily**

13. When was the cross connection control device last tested on the potable water service? **See Comments**

14. Is sludge being disposed in accordance with the approved sludge disposal plan? [X] Yes [ ] No [ ] NA

15. Is septage received by the facility?	[ ] Yes	[X] No	
Is septage loading controlled?	[ ] Yes	[ ] No	[X] **N/A**
Are records maintained?	[ ] Yes	[ ] No	[X] **N/A**
16. Overall appearance of facility:	[X] Good	[ ] Average	[ ] Poor

Comments:

- **Plant experiences higher flows due to I&I during significant rainfall events. Mr. Morefield stated that they received 253,000 gallons during a 1.1" rainfall event. The plant continues to fix laterals to improve I&I at the plant. (#8)**
- **Sludge is pumped and hauled to Broad Run WWTP**
- **Provide the date when the cross connection control device was last tested on the potable water service**

(B) PLANT RECORDS (Outfall 001)

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	[X] Yes	[ ] No	[ ] NA
Instrument maintenance and calibration	[X] Yes	[ ] No	[ ] NA
Mechanical equipment maintenance	[X] Yes	[ ] No	[ ] NA
Industrial waste contribution (Municipal Facilities)	[ ] Yes	[ ] No	[X] NA

2. What does the operational log contain?

[X] Visual observations	[X] Flow measurement
[X] Laboratory results	[X] Process adjustments
[X] Control calculations	[ ] Other (specify)

Comments:

3. What do the mechanical equipment records contain?

[X] As built plans and specs	[ ] Spare parts inventory
[X] Manufacturers instructions	[X] Equipment/parts suppliers
[ ] Lubrication schedules	[ ] Other (specify)

Comments:

4. What do the industrial waste contribution records contain? **N/A** (Municipal Only)?

[ ] Waste characteristics	[ ] Locations and discharge types
[ ] Impact on plant	[ ] Other (specify)

Comments:

5. Which of the following records are kept at the plant and available to personnel?

[X] Equipment maintenance records	[X] Operational Log
[ ] Industrial contributor records	[ ] Instrumentation records
[X] Sampling and testing records	

6. Records not normally available to plant personnel and their location: **Plant keeps all records onsite and available upon request**

7. Were the records reviewed during the inspection?	[X] Yes	[ ] No
8. Are the records adequate and the O & M Manual current?	[X] Yes	[ ] No
9. Are the records maintained for the required 3-year time period?	[X] Yes	[ ] No

Comments:

- **All records kept onsite and up to date**

(C) SAMPLING:

1. Do sampling locations appear to be capable of providing representative samples? [X] Yes [ ] No*
2. Do sample types correspond to those required by the VPDES permit? [X] Yes [ ] No*
3. Do sampling frequencies correspond to those required by the VPDES permit? [X] Yes [ ] No*
4. **Are composite samples collected in proportion to flow?** [ ] Yes [ ] No* [ ] NA
5. Are composite samples refrigerated during collection? [X] Yes [ ] No* [ ] NA
6. Does plant maintain required records of sampling? [X] Yes [ ] No*
7. Does plant run operational control tests? [X] Yes [ ] No

Comments: **See Request for Corrective Action**

(D) TESTING

1. Who performs the testing? [X] Plant [ ] Central Lab [X] Commercial Lab

Name: **Town of Hamilton staff**
- **pH, D.O**

Joiner Micro Laboratories, Inc.
- **BOD_5, TSS, NH_3, E.Coli**

Analytics Corporation
- **Copper, Total Recoverable**

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? **N/A**
3. Does plant appear to have sufficient equipment to perform required tests? [X] Yes [ ] No*
4. Does testing instrumentation appear to be clean and/or operable? [X] Yes [ ] No*

Comments:
- **Instrumentation is in good condition; all buffers are within proper expiration dates.**

(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1. Is the production process as described in the permit application? (If no, describe changes in comments)
   [ ] Yes [ ] No [X] NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)
   [ ] Yes [ ] No [X] NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:
   [ ] Yes [ ] No* [X] NA

Comments:
- **None**

Summary: Town of Hamilton STP (Outfall 001):

- DEQ met Les Morefield and Scott Englund onsite for a technical inspection
- DEQ inspected the laboratory records and noted the following:
    - There were no Initial Demonstration of Capability forms available for the operators onsite that perform and record pH and D.O. on the Discharge Monitoring reports (**See Request for Corrective Action in the Laboratory Report**).
    - All laboratory equipment and buffers were in good conditions and up to date with the NIST certification. Buffers were within expiration dates.
    - All laboratory records and logs were up to date and complete.
- DEQ took a tour of the plant. The Town of Hamilton receives effluent from three pump stations as well as gravity lines. The plant has historical Inflow and Infiltration (I&I) impacts during high rainfall events. The Town recently fixed two laterals off of Saint Paul Street to help improve the I&I situation.
- Wastewater enters the plant and flows through a grit chamber and comminuter (photos 1 & 2). No problems observed at the headworks.
- After the grit chamber, the flow splits between three aeration basins (photos 3 & 4). There was heavy foam observed in one of the aeration basins (photo 3).
- After the aeration basins, flow is split between the two clarifiers. The clarifiers are manually skimmed several times throughout the day. It appeared that there was foam buildup on the surface and the clarifiers needed skimming at that time. The Town of Hamilton staff began skimming while DEQ was onsite. (photos 5 & 6).
- From the clarifiers, the flow goes to the Ultraviolet Disinfection, which consists of four banks operated in series. The intensity meters were operational and read 6.0 mW/cm^2 and 3.2 mW/cm^2 respectively (photos 7 & 8). However, the indicator lights on the UV banks were not all on (photo 9). **See Request for Corrective Action.**
- The Town of Hamilton staff stated that they change out the UV bulbs once per year and clean them periodically with Lime-A-Way. Additionally, they performed a system overhaul in the Spring of 2015.
- Final effluent is then discharged to Outfall 001. The outfall had a lot of algae as well as sludge-like material downstream of the discharge (photos 10 - 12). **See Request for Corrective Action.**
- Sludge is held in an aerobic digester, which is pumped and hauled to the Broad Run WWTP.

REQUEST for CORRECTIVE ACTION:

1. **Permit VA0020974 Part II.D. states:** "The permittee shall furnish to the Department, within a reasonable time, any information which the Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Board may require the permittee to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from this discharge on the quality of state waters, or such other information

as may be necessary to accomplish the purposes of the State Water Control Law. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit."

Observations: DEQ observed sludge downstream of Outfall 001 in the receiving stream

Identify the source of the sludge in the receiving stream and provide an explanation to DEQ of how it is going to be prevented in the future

Provide an explanation to DEQ as to how the composite samples are taken and if they are proportional to effluent flow.

2. **Permit VA0020974 Part I.D.3 Operations and Maintenance (O&M) Manual Requirement, states:**
"The permittee shall maintain a current Operations and Maintenance (O&M) Manual for the treatment works that is in accordance with Virginia Pollutant Discharge Elimination System Regulations, 9VAC25-31 and (for sewage treatment plants) Sewage Collection and Treatment Regulations, 9VAC25-790.

The O&M Manual and subsequent revisions shall include the manual effective date and meet Part II.K.2 and Part II.K.4 Signatory Requirements of the permit. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M manual available to Department personnel for review during facility inspections. Within 30 days of a request by DEQ, the current O&M Manual shall be submitted to the DEQ-NRO for review and approval.

The O&M Manual shall detail the practices and procedures which will be followed to ensure compliance with the requirements of this permit. This manual shall include, but not necessarily be limited to, the following items, as appropriate:

a. Permitted outfall locations and techniques to be employed in the collection, preservation, and analysis of effluent, storm water and sludge samples;
b. Procedures for measuring and recording the duration and volume of treated wastewater discharged;
c. Discussion of Best Management Practices, if applicable;
d. Procedures for handling, storing, and disposing of all wastes, fluids, and pollutants that will prevent these materials from reaching state waters. List type and quantity of wastes, fluids, and pollutants (e.g. chemicals) stored at this facility;
e. Discussion of treatment works design, treatment works operation, routine preventative maintenance of units within the treatment works, critical spare parts inventory and record keeping;
f. Plan for the management and/or disposal of waste solids and residues;
g. Hours of operation and staffing requirements for the plant to ensure effective operation of the treatment works and maintain permit compliance;
h. List of facility, local and state emergency contacts; and
i. Procedures for reporting and responding to any spills/overflows/ treatment works upsets."

Observations: DEQ observed lights that were inoperable on the UV disinfection system. This system must be operated in accordance with the O&M and all manufacturer's instructions.

Provide an explanation and timeline to DEQ as to when this will be fixed and prevented in the future.

RECOMMENDATIONS:

- **None**

UNIT PROCESS: Screening/Comminution

1. Number of Units:	Manual:	**1**	Mechanical:	
Number in operation:	Manual:	**1**	Mechanical:	
2. Bypass channel provided:		[X] Yes	[ ] No*	
Bypass channel in use:		[ ] Yes	[X] No	
3. Area adequately ventilated:		[X] Yes	[ ] No*	
4. Alarm system for equipment failure or overloads:		[X] Yes	[ ] No*	
5. Proper flow distribution between units:		[ ] Yes	[ ] No	[X] NA
6. How often are units checked and cleaned?		**Daily**		
7. Cycle of operation:	**Continuous**			
8. Volume of screenings removed:	**Removed as needed when buckets are full – unknown volume**			
9. General condition:	[X] Good	[ ] Fair	[ ] Poor	

Comments:

UNIT PROCESS: Grit Removal

1. Number of units:	**1**	In operation:	**1**	
2. Unit adequately ventilated:		[X] Yes	[ ] No*	
3. Operation of grit collection equipment:		[X] Manual	[ ] Time clock	[ ] Continuous duty
4. Proper flow distribution between units:		[ ] Yes	[ ] No*	[X] NA
5. Daily volume of grit removed:	**Buckets are disposed of when full**			
6. All equipment operable:		[X] Yes	[ ] No*	
7. General condition:	[X] Good	[ ] Fair	[ ] Poor	

Comments:

- **None**

UNIT PROCESS: Activated Sludge Aeration

1. Number of units: **3** In operation: **3**
2. Mode of operation: **Aeration Basin**
3. Proper flow distribution between units: [X] Yes [ ] No* [ ] NA
4. Foam control operational: [ ] Yes [ ] No* [X] NA
5. Scum control operational: [X] Yes [ ] No* [ ] NA
6. Evidence of following problems:
   a. dead spots [ ] Yes* [X] No
   b. excessive foam [X] Yes* [ ] No
   c. poor aeration [ ] Yes* [X] No
   d. excessive aeration [ ] Yes* [X] No
   e. excessive scum [ ] Yes* [X] No
   f. aeration equipment malfunction [ ] Yes* [X] No
   g. other (identify in comments) [ ] Yes* [X] No
7. Mixed liquor characteristics (as available): **December 2015 Average**
   MLSS (Aeration Basin 1): **4845 mg/L**
   MLSS (Aeration Basin 2) **5672 mg/L**
   MLSS (Aeration Basin 3) **4735 mg/L**
   Color: **Brown**
   Odor: **Earthy**
8. Return/waste sludge:
   Waste Frequency: **Approximately two times per day**
9. Aeration system control: [ ] Time Clock [ ] Manual [X] Continuous [ ] Other (explain)
10. Effluent control devices working properly (oxidation ditches): [ ] Yes [ ] No* [X] NA
11. General condition: [X] Good [Fair [ ] Poor

Comments:

- **One of the aeration basins had excess foam**

UNIT PROCESS: Sedimentation

[X] Primary [ ] Secondary [ ] Tertiary

1.	Number of units: **2**	In operation: **2**		
2.	Proper flow distribution between units:	[X] Yes	[ ] No*	[ ] NA
3.	Signs of short circuiting and/or overloads:	[ ] Yes	[X] No	
4.	Effluent weirs level: Clean:	[X] Yes [X] Yes	[ ] No* [ ] No*	
5.	Scum collection system working properly:	[X] Yes	[ ] No*	[ ] NA
6.	Sludge collection system working properly:	[X] Yes	[ ] No*	
7.	Influent, effluent baffle systems working properly:	[X] Yes	[ ] No*	
8.	Chemical addition: Chemicals:	[ ] Yes	[X] No	
9.	Effluent characteristics:	**Some floating particles, foam**		
10.	General condition:	[X] Good	[ ] Fair	[ ] Poor

Comments:

- **Clarifier scum is removed daily by hand and disposed of properly**
- **There was a significant amount of foam on the clarifier – suggest increasing frequency of skimming**

UNIT PROCESS: Ultraviolet (UV) Disinfection

1. Number of UV lamps/assemblies: **4**	In operation: **4**			
2. Type of UV system and design dosage: **Trojan UV 3000 PTP**				
3. Proper flow distribution between units:		[X] Yes	[ ] No*	[ ] NA
4. Method of UV intensity monitoring: **Intensity Meter**				
5. Adequate ventilation of ballast control boxes:		[X] Yes	[ ] No*	[ ] NA
6. Indication of on/off status of all lamps provided:		[ ] Yes	[X] No*	
7. Lamp assemblies easily removed for maintenance:		[X] Yes	[ ] No*	
8. Records of lamp operating hours and replacement dates provided:		[X] Yes	[ ] No*	
9. Routine cleaning system provided:		[X] Yes	[ ] No*	
Operate properly:		[X] Yes	[ ] No*	
Frequency of routine cleaning: **Clean periodically as-needed**				
10. Lamp energy control system operate properly:		[X] Yes	[ ] No*	
11. Date of last system overhaul: **Spring 2015**				
a. UV unit completely drained		[X] Yes	[ ] No*	
b. all surfaces cleaned		[X] Yes	[ ] No*	
c. UV transmissibility checked		[X] Yes	[ ] No*	
d. output of selected lamps checked		[X] Yes	[ ] No*	
e. output of tested lamps		**6.0 mW/cm^2 and 3.1 mW/cm^2**		
f. total operating hours, oldest lamp/assembly		**38183 and 54542**		
g. number of spare lamps and ballasts available:	lamps: **4**	ballasts: **2**		
12. UV protective eyeglasses provided:		[X] Yes	[ ] No*	
13. General condition:		[X] Good	[ ] Fair	[ ] Poor

Comments:

- **Not all of the indicator lights were on the UV system (See Request for Corrective Action)**
- **Note: total number of hours has not been reset upon changing lamps – lamps are changed once/year.**

UNIT PROCESS: Effluent/Plant Outfall

1. Type Outfall: [X] Shore based [ ] Submerged
2. Type if shore based: [ ] Wingwall [ ] Headwall [ ] Rip Rap [X] Other
3. Flapper valve: [ ] Yes [ ] No [X] NA
4. Erosion of bank: [ ] Yes [X] No [ ] NA
5. Effluent plume visible? [ ] Yes* [X] No
6. Condition of outfall and supporting structures: [ ] Good [X] Fair [ ] Poor*
7. Final effluent, evidence of following problems:

a. oil sheen	[ ] Yes*	[X] No
b. grease	[ ] Yes*	[X] No
c. sludge bar	[X] Yes*	[ ] No
d. turbid effluent	[ ] Yes*	[X] No
e. visible foam	[ ] Yes*	[X] No
f. unusual color	[ ] Yes*	[X] No

Comments:

- **The effluent coming out of the pipe was clear and odorless. However, sludge was observed further down in the receiving stream (See Request for Corrective Action).**
- **There was a significant amount of algae buildup on outfall pipe and in receiving stream near the discharge.**

Attachment 4 – Planning Statement

To: Caitlin Shipman
From: Rebecca Shoemaker

Date: March 4, 2016
Subject: Planning Statement for Town of Hamilton Sewage Treatment Plant
Permit Number: VA0020974

Information for Outfall 001:

Discharge Type: Municipal
Discharge Flow: design flow rate – 0.16 MGD, avg. daily flow rate – 0.110 MGD
Receiving Stream: South Fork Catoctin Creek, UT
Latitude / Longitude: 39° 8' 20" / 77° 39' 47"
Rivermile: 1A-XBL1.71
Streamcode: 1aXBL
Waterbody: VAN-A02R; PL02
Water Quality Standards: Class III, Section 10b, no special standards
Drainage Area: 0.40 mi^2

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

This facility discharges to an unnamed tributary to South Fork Catoctin Creek (streamcode XBL) that has been neither monitored nor assessed. The nearest DEQ monitoring station is ambient monitoring station 1ASOC005.46, which is located approximately 2.4 miles downstream from Outfall 001. The following is the water quality summary for this segment of South Fork Catoctin Creek, as taken from the draft 2014 Integrated Report:

Class III, Section 10b.

DEQ monitoring stations located on this segment of South Fork Catoctin Creek:

- *biological monitoring station 1aSOC000.01, upstream from the confluence with North Fork Catoctin Creek*
- *ambient monitoring station 1aSOC001.66, at Route 698*
- *ambient monitoring station 1aSOC005.46, at Route 9*

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. The E. coli data collected by the citizen monitoring group indicate that a water quality issue may exist for the recreation use; however, the methodology and/or data quality has not been approved for such a determination. A fecal coliform TMDL for the South Fork Catoctin Creek watershed has been completed and approved.

Biological and associated chemical monitoring finds this segment to be supporting the aquatic life use. Citizen monitoring indicates a low probability of adverse conditions for biota. The wildlife use is considered fully supporting. The fish consumption use was not assessed.

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

No.

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

Yes.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the Draft 2014 Integrated Report							
South Fork Catoctin Creek	Recreation	*E. coli*	1.7 miles	Catoctin Creek Bacteria TMDL 5/31/2002	4.42E+11 cfu/year fecal coliform bacteria 2.79E+11 cfu/year *E. coli* bacteria*	200 cfu/100 ml fecal coliform 126 cfu/100 ml *E. coli** --- 0.16 MGD	---

* The WLA is expressed in the Catoctin Creek Bacteria TMDL as cfu/year fecal coliform bacteria.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are no public water supply intakes located within five miles of this discharge.

Attachment 5 – Water Quality Criteria/Wasteload Allocation Analysis
(MSTRANTI Spreadsheet)

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Town of Hamilton STP Permit No: VA0020974

Receiving Stream: UT of South Fork Catoctin Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	109 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	25 deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	15 deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	7 6 SU
10% Maximum pH =	SU	30Q10 (Wet season)	0 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	7.1 SU
Tier Designation (1 or 2) =	1	30Q5 =	0 MGD			Discharge Flow =	0.16 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9 9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9 9E+02
Acrolein	0	--	--	na	9 3E+00	--	--	na	9 3E+00	--	--	--	--	--	--	--	--	--	--	na	9.3E+00
Acrylonitrile [C]	0	--	--	na	2 5E+00	--	--	na	2 5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Aldrin [C]	0	3 0E+00	--	na	5 0E-04	3 0E+00	--	na	5 0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	1 70E+01	2 02E+00	na	--	1 70E+01	2 02E+00	na	--	--	--	--	--	--	--	--	--	1.70E+01	2.02E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1 70E+01	3 85E+00	na	--	1 70E+01	3 85E+00	na	--	--	--	--	--	--	--	--	--	1.70E+01	3.85E+00	na	--
Anthracene	0	--	--	na	4 0E+04	--	--	na	4 0E+04	--	--	--	--	--	--	--	--	--	--	na	4.0E+04
Antimony	0	--	--	na	6 4E+02	--	--	na	6 4E+02	--	--	--	--	--	--	--	--	--	--	na	6.4E+02
Arsenic	o	3 4E+02	1 5E+02	na	--	3 4E+02	1 5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5 1E+02	--	--	na	5 1E+02	--	--	--	--	--	--	--	--	--	--	na	5.1E+02
Benzidine [C]	0	--	--	na	2 0E-03	--	--	na	2 0E-03	--	--	--	--	--	--	--	--	--	--	na	2.0E-03
Benzo (a) anthracene [C]	0	--	--	na	1 8E-01	--	--	na	1 8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (b) fluoranthene [C]	0	--	--	na	1 8E-01	--	--	na	1 8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (k) fluoranthene [C]	0	--	--	na	1 8E-01	--	--	na	1 8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (a) pyrene [C]	0	--	--	na	1 8E-01	--	--	na	1 8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Bis2-Chloroethyl Ether [C]	0	--	--	na	5 3E+00	--	--	na	5 3E+00	--	--	--	--	--	--	--	--	--	--	na	5.3E+00
Bis2-Chloroisopropyl Ether	0	--	--	na	6 5E+04	--	--	na	6 5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2 2E+01	--	--	na	2 2E+01	--	--	--	--	--	--	--	--	--	--	na	2.2E+01
Bromoform [C]	0	--	--	na	1 4E+03	--	--	na	1 4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Butylbenzylphthalate	0	--	--	na	1 9E+03	--	--	na	1 9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
Cadmium	0	4 3E+00	1 2E+00	na	--	4 3E+00	1 2E+00	na	--	--	--	--	--	--	--	--	--	4.3E+00	1.2E+00	na	--
Carbon Tetrachloride [C]	0	--	--	na	1 6E+01	--	--	na	1 6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Chlordane [C]	0	2 4E+00	4 3E-03	na	8 1E-03	2 4E+00	4 3E-03	na	8 1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8 6E+05	2 3E+05	na	--	8 6E+05	2 3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1 9E+01	1 1E+01	na	--	1 9E+01	1 1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1 6E+03	--	--	na	1 6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1 3E+02	--	--	na	1 3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1 1E+04	--	--	na	1 1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1 6E+03	--	--	na	1 6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1 5E+02	--	--	na	1 5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpynfos	0	8 3E-02	4 1E-02	na	--	8 3E-02	4 1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	6 1E+02	8 0E+01	na	--	6 1E+02	8 0E+01	na	--	--	--	--	--	--	--	--	--	6.1E+02	8.0E+01	na	--
Chromium VI	0	1 6E+01	1 1E+01	na	--	1 6E+01	1 1E+01	na	--	--	--	--	--	--	--	--	--	1 6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1 0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	1 8E-02	--	--	na	1 8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	1 5E+01	9 6E+00	na	--	1 5E+01	9 6E+00	na	--	--	--	--	--	--	--	--	--	1.5E+01	9 6E+00	na	--
Cyanide, Free	0	2 2E+01	5 2E+00	na	1 6E+04	2 2E+01	5 2E+00	na	1 6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD [C]	0	--	--	na	3 1E-03	--	--	na	3 1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE [C]	0	--	--	na	2 2E-03	--	--	na	2 2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT [C]	0	1 1E+00	1 0E-03	na	2 2E-03	1 1E+00	1 0E-03	na	2 2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1 0E-01	na	--	--	1 0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1 7E-01	1 7E-01	na	--	1 7E-01	1 7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1 8E-01	--	--	na	1 8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1 3E+03	--	--	na	1 3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9 6E+02	--	--	na	9 6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1 9E+02	--	--	na	1 9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2 8E-01	--	--	na	2 8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane [C]	0	--	--	na	1 7E+02	--	--	na	1 7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane [C]	0	--	--	na	3 7E+02	--	--	na	3 7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7 1E+03	--	--	na	7 1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1 0E+04	--	--	na	1 0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2 9E+02	--	--	na	2 9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1 5E+02	--	--	na	1 5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene [C]	0	--	--	na	2 1E+02	--	--	na	2 1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin [C]	0	2 4E-01	5 6E-02	na	5 4E-04	2 4E-01	5 6E-02	na	5 4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4 4E+04	--	--	na	4 4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8 5E+02	--	--	na	8 5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1 1E+06	--	--	na	1 1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4 5E+03	--	--	na	4 5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5 3E+03	--	--	na	5 3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2 8E+02	--	--	na	2 8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene [C]	0	--	--	na	3 4E+01	--	--	na	3 4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5 1E-08	--	--	na	5 1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2 0E+00	--	--	na	2 0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2 2E-01	5 6E-02	na	8 9E+01	2 2E-01	5.6E-02	na	8 9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2 2E-01	5 6E-02	na	8 9E+01	2 2E-01	5 6E-02	na	8 9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2 2E-01	5 6E-02	--	--	2 2E-01	5 6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8 9E+01	--	--	na	8 9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8 6E-02	3 6E-02	na	6 0E-02	8 6E-02	3 6E-02	na	6 0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3 0E-01	--	--	na	3 0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2 1E+03	--	--	na	2 1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1 4E+02	--	--	na	1 4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5 3E+03	--	--	na	5 3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1 0E-02	na	--	--	1 0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [c]	0	5 2E-01	3 8E-03	na	7 9E-04	5 2E-01	3 8E-03	na	7 9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide[c]	0	5 2E-01	3 8E-03	na	3 9E-04	5 2E-01	3 8E-03	na	3 9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene[c]	0	--	--	na	2 9E-03	--	--	na	2 9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene[c]	0	--	--	na	1 8E+02	--	--	na	1 8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC[c]	0	--	--	na	4 9E-02	--	--	na	4 9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC[c]	0	--	--	na	1 7E-01	--	--	na	1 7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC[c] (Lindane)	0	9 5E-01	na	na	1 8E+00	9 5E-01	--	na	1 8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1 1E+03	--	--	na	1 1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane[c]	0	--	--	na	3 3E+01	--	--	na	3 3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2 0E+00	na	--	--	2 0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [c]	0	--	--	na	1 8E-01	--	--	na	1 8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[c]	0	--	--	na	9 6E+03	--	--	na	9 6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0 0E+00	na	--	--	0 0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	1 3E+02	1 5E+01	na	--	1 3E+02	1 5E+01	na	--	--	--	--	--	--	--	--	--	1.3E+02	1.5E+01	na	--
Malathion	0	--	1 0E-01	na	--	--	1 0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1 4E+00	7 7E-01	--	--	1 4E+00	7 7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1 5E+03	--	--	na	1 5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [c]	0	--	--	na	5 9E+03	--	--	na	5 9E+03	--	--	--	--	--	--	--	--	--	--	na	5 9E+03
Methoxychlor	0	--	3 0E-02	na	--	--	3 0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0 0E+00	na	--	--	0 0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	2 0E+02	2 2E+01	na	4 6E+03	2 0E+02	2 2E+01	na	4 6E+03	--	--	--	--	--	--	--	--	2.0E+02	2.2E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6 9E+02	--	--	na	6 9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine[c]	0	--	--	na	3 0E+01	--	--	na	3 0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine[c]	0	--	--	na	6 0E+01	--	--	na	6 0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine[c]	0	--	--	na	5 1E+00	--	--	na	5 1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2 8E+01	6 6E+00	--	--	2 8E+01	6 6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6 5E-02	1 3E-02	na	--	6 5E-02	1 3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total[c]	0	--	1 4E-02	na	6 4E-04	--	1 4E-02	na	6 4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [c]	0	9 6E+00	7 4E+00	na	3 0E+01	9 6E+00	7 4E+00	na	3 0E+01	--	--	--	--	--	--	--	--	9.6E+00	7.4E+00	na	3.0E+01
Phenol	0	--	--	na	8 6E+05	--	--	na	8 6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4 0E+03	--	--	na	4 0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2 0E+01	5 0E+00	na	4 2E+03	2 0E+01	5 0E+00	na	4 2E+03	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**4.2E+03**
Silver	0	4 0E+00	--	na	--	4 0E+00	--	na	--	--	--	--	--	--	--	--	--	**4.0E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4 0E+01	--	--	na	4 0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+01**
Tetrachloroethylene[C]	0	--	--	na	3 3E+01	--	--	na	3 3E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.3E+01**
Thallium	0	--	--	na	4 7E-01	--	--	na	4 7E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.7E-01**
Toluene	0	--	--	na	6 0E+03	--	--	na	6 0E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.0E+03**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7 3E-01	2 0E-04	na	2 8E-03	7 3E-01	2 0E-04	na	2 8E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**2.8E-03**
Tributyltin	0	4 6E-01	7 2E-02	na	--	4 6E-01	7 2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	7 0E+01	--	--	na	7 0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.0E+01**
1,1,2-Trichloroethane[C]	0	--	--	na	1 6E+02	--	--	na	1 6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+02**
Trichloroethylene [C]	0	--	--	na	3 0E+02	--	--	na	3 0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3 0E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	2 4E+01	--	--	na	2 4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2 4E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	2 4E+01	--	--	na	2 4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
Zinc	0	1 3E+02	1 3E+02	na	2 6E+04	1 3E+02	1 3E+02	na	2 6E+04	--	--	--	--	--	--	--	--	**1.3E+02**	**1.3E+02**	**na**	**2.6E+04**

Notes

1 All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise

2 Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals

3 Metals measured as Dissolved, unless specified otherwise

4 "C" indicates a carcinogenic parameter

5 Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information
Antidegradation WLAs are based upon a complete mix

6 Antideg Baseline = (0 25(WQC - background conc) + background conc) for acute and chronic
= (0 1(WQC - background conc) + background conc) for human health

7 WLAs established at the following stream flows 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix

Metal	Target Value (SSTV)
Antimony	6 4E+02
Arsenic	9 0E+01
Barium	na
Cadmium	7 3E-01
Chromium III	4 8E+01
Chromium VI	6 4E+00
Copper	5 8E+00
Iron	na
Lead	9 0E+00
Manganese	na
Mercury	4 6E-01
Nickel	1 3E+01
Selenium	3 0E+00
Silver	1 6E+00
Zinc	5 0E+01

Note do not use QL's lower than the minimum QL's provided in agency guidance

Attachment 6 – Ammonia Limit Calculations (STATS)

5/16/2016 2:53:25 PM

Facility = Town of Hamilton
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 17
WLAc = 2.02
Q.L. = .1
# samples/mo. = 12
# samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 4.07569358870095
Average Weekly limit = 2.98114039826645
Average Monthly LImit = 2.22055994786516

The data are:

9

Attachment 7 – Summary of Effluent Data

Due	Rec'd	Parameter Description	QTY AVG	Lim Avg	QTY MAX	Lim Max	Quantity Unit Lim	CONC MIN	Lim Min	CONC AVG	Lim Avg	CONC MAX	Lim Max	Concentration Unit Lim
10-Jan-2016	08-Jan-2016	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.58	1 3	1.3	2 4	MG/L
10-Dec-2015	09-Dec-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.19	1.3	0.74	2.4	MG/L
10-Nov-2015	06-Nov-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.11	1 3	0.15	2 4	MG/L
10-Oct-2015	08-Oct-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.14	1 3	0.23	2 4	MG/L
10-Sep-2015	08-Sep-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.2	1 3	0.2	2 4	MG/L
10-Aug-2015	10-Aug-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.22	1 3	0.28	2 4	MG/L
10-Jul-2015	08-Jul-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.56	1 3	1.5	2.4	MG/L
10-Jun-2015	05-Jun-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.22	1.3	0.36	2.4	MG/L
10-May-2015	08-May-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.04	1.3	0.09	2.4	MG/L
10-Apr-2015	08-Apr-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.82	1.3	2	2.4	MG/L
10-Mar-2015	09-Mar-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.21	1 3	0.35	2.4	MG/L
10-Feb-2015	06-Feb-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.1	1.3	0.18	2.4	MG/L
10-Jan-2015	09-Jan-2015	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.06	1.3	0.16	2 4	MG/L
10-Dec-2014	08-Dec-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.04	1.3	0.08	2 4	MG/L
10-Nov-2014	07-Nov-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.1	1.3	0.18	2 4	MG/L
10-Oct-2014	09-Oct-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.19	1.3	0.23	2 4	MG/L
10-Sep-2014	05-Sep-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.5	1 3	0.79	2 4	MG/L
10-Aug-2014	07-Aug-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.76	1 3	1.4	2 4	MG/L
10-Jul-2014	08-Jul-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.9	1.3	1.6	2.4	MG/L
10-Jun-2014	05-Jun-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.78	1.3	1.2	2 4	MG/L
10-May-2014	08-May-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.84	1 3	0.65	2.4	MG/L
10-Apr-2014	07-Apr-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	<QL	1.3	<QL	2 4	MG/L
10-Mar-2014	07-Mar-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	1	1 3	3.5	2 4	MG/L
10-Feb-2014	07-Feb-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.49	1 3	1.2	2.4	MG/L
10-Jan-2014	10-Jan-2014	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.06	1 3	0.17	2.4	MG/L
10-Dec-2013	09-Dec-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0	1.3	0	2.4	MG/L
10-Nov-2013	08-Nov-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0	1.3	0	2.4	MG/L
10-Oct-2013	08-Oct-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.1	1.3	0.16	2.4	MG/L
10-Sep-2013	09-Sep-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.34	1.3	0.7	2 4	MG/L
10-Aug-2013	09-Aug-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.23	1.3	0.27	2.4	MG/L
10-Jul-2013	08-Jul-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.21	1 3	0.29	2.4	MG/L
10-Jun-2013	07-Jun-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.55	1 3	0.41	2.4	MG/L
10-May-2013	08-May-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.45	1 3	1	2.4	MG/L
10-Apr-2013	09-Apr-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.13	1.3	0.27	2.4	MG/L
10-Mar-2013	07-Mar-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.15	1 3	0.24	2.4	MG/L
10-Feb-2013	08-Feb-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.15	1.3	0.18	2.4	MG/L
10-Jan-2013	10-Jan-2013	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.17	1.3	0.36	2 4	MG/L
10-Dec-2012	07-Dec-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.15	1.3	0.07	2 4	MG/L
10-Nov-2012	07-Nov-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.41	1.3	0.15	2 4	MG/L
10-Oct-2012	09-Oct-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.15	1.3	0.25	2.4	MG/L
10-Sep-2012	07-Sep-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.1	1.3	0.18	2.4	MG/L
10-Aug-2012	06-Aug-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.17	1.3	0.24	2.4	MG/L
10-Jul-2012	09-Jul-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.22	1.3	0.44	2.4	MG/L
10-Jun-2012	08-Jun-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.3	1.3	0.32	2.4	MG/L
10-May-2012	04-May-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.24	1.3	0.32	2.4	MG/L
10-Apr-2012	09-Apr-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.38	1.3	0.58	2 4	MG/L
10-Mar-2012	09-Mar-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	2.5	1.3	10.1	2.4	MG/L
10-Feb-2012	08-Feb-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.21	1.3	0.27	2 4	MG/L
10-Jan-2012	09-Jan-2012	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.23	1.3	0.33	2.4	MG/L
10-Dec-2011	08-Dec-2011	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.13	1 3	0.23	2 4	MG/L
10-Nov-2011	09-Nov-2011	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.22	1 3	0.25	2 4	MG/L
10-Nov-2011	09-Nov-2011	AMMONIA, AS N	NULL	**********	NULL	**********	NULL	NULL	**********	0.22	1 3	0.25	2 4	MG/L
10-Jan-2016	08-Jan-2016	BOD5	2	12	3.9	18	KG/D	NULL	**********	3.6	20	5.3	30	MG/L
10-Dec-2015	09-Dec-2015	BOD5	1	12	1.7	18	KG/D	NULL	**********	2.7	20	3.7	30	MG/L
10-Nov-2015	06-Nov-2015	BOD5	2.5	12	3	18	KG/D	NULL	**********	5.9	20	6.3	30	MG/L
10-Oct-2015	08-Oct-2015	BOD5	1.5	12	1.4	18	KG/D	NULL	**********	4.3	20	5	30	MG/L
10-Sep-2015	08-Sep-2015	BOD5	1.4	12	1.7	18	KG/D	NULL	**********	4.9	20	5.7	30	MG/L
10-Aug-2015	10-Aug-2015	BOD5	1.9	12	2.9	18	KG/D	NULL	**********	5.1	20	7.7	30	MG/L
10-Jul-2015	08-Jul-2015	BOD5	3.4	12	4.3	18	KG/D	NULL	**********	9.7	20	14	30	MG/L
10-Jun-2015	05-Jun-2015	BOD5	2	12	2.6	18	KG/D	NULL	**********	5.7	20	7.7	30	MG/L
10-May-2015	08-May-2015	BOD5	2.5	12	4	18	KG/D	NULL	**********	5.4	20	7.3	30	MG/L
10-Apr-2015	08-Apr-2015	BOD5	4.4	12	7.5	18	KG/D	NULL	**********	7.2	20	10	30	MG/L
10-Mar-2015	09-Mar-2015	BOD5	2.7	12	4	18	KG/D	NULL	**********	7.8	20	12	30	MG/L
10-Feb-2015	06-Feb-2015	BOD5	1.8	12	2.6	18	KG/D	NULL	**********	4.3	20	6	30	MG/L

10-Jan-2015	09-Jan-2015	BOD5	1.6	12	3.5	18	KG/D	NULL	**********	3.5	20	6.3	30	MG/L
10-Dec-2014	08-Dec-2014	BOD5	1.4	12	1.6	18	KG/D	NULL	**********	4.2	20	5	30	MG/L
10-Nov-2014	07-Nov-2014	BOD5	1.5	12	2.3	18	KG/D	NULL	**********	4.1	20	5.3	30	MG/L
10-Oct-2014	09-Oct-2014	BOD5	1.4	12	1.6	18	KG/D	NULL	**********	4.2	20	5.3	30	MG/L
10-Sep-2014	05-Sep-2014	BOD5	2	12	2.7	18	KG/D	NULL	**********	6.5	20	7.7	30	MG/L
10-Aug-2014	07-Aug-2014	BOD5	1.6	12	2.3	18	KG/D	NULL	**********	4.9	20	6	30	MG/L
10-Jul-2014	08-Jul-2014	BOD5	4.9	12	9.5	18	KG/D	NULL	**********	7.9	20	9.3	30	MG/L
10-Jun-2014	05-Jun-2014	BOD5	4.8	12	5	18	KG/D	NULL	**********	7.2	20	8.7	30	MG/L
10-May-2014	08-May-2014	BOD5	6.1	12	4.6	18	KG/D	NULL	**********	9.8	20	8.7	30	MG/L
10-Apr-2014	07-Apr-2014	BOD5	2.5	12	2.9	18	KG/D	NULL	**********	5.1	20	6	30	MG/L
10-Mar-2014	07-Mar-2014	BOD5	7.1	12	13.4	18	KG/D	NULL	**********	9.8	20	13.7	30	MG/L
10-Feb-2014	07-Feb-2014	BOD5	4.3	12	5.2	18	KG/D	NULL	**********	10.2	20	14	30	MG/L
10-Jan-2014	10-Jan-2014	BOD5	4.3	12	5.8	18	KG/D	NULL	**********	8.8	20	10.3	30	MG/L
10-Dec-2013	09-Dec-2013	BOD5	2.2	12	2.6	18	KG/D	NULL	**********	6.5	20	7.7	30	MG/L
10-Nov-2013	08-Nov-2013	BOD5	2	12	3.6	18	KG/D	NULL	**********	5.7	20	9.7	30	MG/L
10-Oct-2013	08-Oct-2013	BOD5	0.82	12	1.2	18	KG/D	NULL	**********	3	20	4.3	30	MG/L
10-Sep-2013	09-Sep-2013	BOD5	0.81	12	1.2	18	KG/D	NULL	**********	2.9	20	4.3	30	MG/L
10-Aug-2013	09-Aug-2013	BOD5	1	12	1.7	18	KG/D	NULL	**********	3.4	20	5.3	30	MG/L
10-Jul-2013	08-Jul-2013	BOD5	2.8	12	5	18	KG/D	NULL	**********	5.8	20	7	30	MG/L
10-Jun-2013	07-Jun-2013	BOD5	2.1	12	3.1	18	KG/D	NULL	**********	5.4	20	5	30	MG/L
10-May-2013	08-May-2013	BOD5	2.1	12	2.9	18	KG/D	NULL	**********	6	20	8.7	30	MG/L
10-Apr-2013	09-Apr-2013	BOD5	3.2	12	4.6	18	KG/D	NULL	**********	5.6	20	6	30	MG/L
10-Mar-2013	07-Mar-2013	BOD5	2.4	12	2.8	18	KG/D	NULL	**********	5.2	20	7	30	MG/L
10-Feb-2013	08-Feb-2013	BOD5	3.8	12	6	18	KG/D	NULL	**********	6.5	20	9	30	MG/L
10-Jan-2013	10-Jan-2013	BOD5	3.2	12	8.4	18	KG/D	NULL	**********	6.5	20	12	30	MG/L
10-Dec-2012	07-Dec-2012	BOD5	4.6	12	3.8	18	KG/D	NULL	**********	9.5	20	9.3	30	MG/L
10-Nov-2012	07-Nov-2012	BOD5	6.8	12	3	18	KG/D	NULL	**********	10.2	20	9.3	30	MG/L
10-Oct-2012	09-Oct-2012	BOD5	2.1	12	3.7	18	KG/D	NULL	**********	6.2	20	11.7	30	MG/L
10-Sep-2012	07-Sep-2012	BOD5	1.1	12	1.1	18	KG/D	NULL	**********	3.7	20	3	30	MG/L
10-Aug-2012	06-Aug-2012	BOD5	1.5	12	1.8	18	KG/D	NULL	**********	4.9	20	6	30	MG/L
10-Jul-2012	09-Jul-2012	BOD5	1.2	12	1.7	18	KG/D	NULL	**********	3.6	20	4.7	30	MG/L
10-Jun-2012	08-Jun-2012	BOD5	2.3	12	3.7	18	KG/D	NULL	**********	5.5	20	6.3	30	MG/L
10-May-2012	04-May-2012	BOD5	1.7	12	2.1	18	KG/D	NULL	**********	5.6	20	6.7	30	MG/L
10-Apr-2012	09-Apr-2012	BOD5	3.3	12	3.5	18	KG/D	NULL	**********	8.7	20	10	30	MG/L
10-Mar-2012	09-Mar-2012	BOD5	2.4	12	3.2	18	KG/D	NULL	**********	7	20	10.3	30	MG/L
10-Feb-2012	08-Feb-2012	BOD5	2.5	12	3.3	18	KG/D	NULL	**********	6.7	20	8.3	30	MG/L
10-Jan-2012	09-Jan-2012	BOD5	3.2	12	5.2	18	KG/D	NULL	**********	6.5	20	7.3	30	MG/L
10-Dec-2011	08-Dec-2011	BOD5	2.7	12	4.2	18	KG/D	NULL	**********	5.9	20	6.3	30	MG/L
10-Nov-2011	09-Nov-2011	BOD5	2.3	12	3.5	18	KG/D	NULL	**********	5.3	20	6	30	MG/L
10-Nov-2011	09-Nov-2011	BOD5	2.3	12	3.5	18	KG/D	NULL	**********	5.3	20	6	30	MG/L
10-Jan-2016	08-Jan-2016	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	7.1	15	7.1	15	UG/L
10-Dec-2015	09-Dec-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Nov-2015	06-Nov-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	10	15	10	15	UG/L
10-Oct-2015	08-Oct-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	11.7	15	11.7	15	UG/L
10-Sep-2015	08-Sep-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	8.4	15	8.4	15	UG/L
10-Aug-2015	10-Aug-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5.4	15	5.4	15	UG/L
10-Jul-2015	08-Jul-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	8.2	15	8.2	15	UG/L
10-Jun-2015	05-Jun-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	6.6	15	6.6	15	UG/L
10-May-2015	08-May-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5.6	15	5.6	15	UG/L
10-Apr-2015	08-Apr-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Mar-2015	09-Mar-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	6	15	6	15	UG/L
10-Feb-2015	06-Feb-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Jan-2015	09-Jan-2015	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	11.7	15	16.7	15	UG/L
10-Dec-2014	08-Dec-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Nov-2014	07-Nov-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L

10-Oct-2014	09-Oct-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5.5	15	5.5	15	UG/L
10-Sep-2014	05-Sep-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	9.5	15	9.5	15	UG/L
10-Aug-2014	07-Aug-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5.4	15	5.4	15	UG/L
10-Jul-2014	08-Jul-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	7.7	15	7.7	15	UG/L
10-Jun-2014	05-Jun-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-May-2014	08-May-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Apr-2014	07-Apr-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Mar-2014	07-Mar-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Feb-2014	07-Feb-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	12.8	15	12.8	15	UG/L
10-Jan-2014	10-Jan-2014	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Dec-2013	09-Dec-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	7.6	15	7.6	15	UG/L
10-Nov-2013	08-Nov-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	6.4	15	6.4	15	UG/L
10-Oct-2013	08-Oct-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	8	15	8	15	UG/L
10-Sep-2013	09-Sep-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	7.8	15	7.8	15	UG/L
10-Aug-2013	09-Aug-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Jul-2013	08-Jul-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	6.8	15	6.8	15	UG/L
10-Jun-2013	07-Jun-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	8.6	15	8.6	15	UG/L
10-May-2013	08-May-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Apr-2013	09-Apr-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	9.6	15	9.6	15	UG/L
10-Mar-2013	07-Mar-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Feb-2013	08-Feb-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	10.3	15	10.3	15	UG/L
10-Jan-2013	10-Jan-2013	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	13.5	15	13.5	15	UG/L
10-Dec-2012	07-Dec-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	10	15	10	15	UG/L
10-Nov-2012	07-Nov-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Oct-2012	09-Oct-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Sep-2012	07-Sep-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	10.4	15	10.4	15	UG/L
10-Aug-2012	06-Aug-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	13.7	15	13.7	15	UG/L
10-Jul-2012	09-Jul-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Jun-2012	08-Jun-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	10.4	15	10.4	15	UG/L
10-May-2012	04-May-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	9.8	15	9.8	15	UG/L
10-Apr-2012	09-Apr-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	10.3	15	10.3	15	UG/L
10-Mar-2012	09-Mar-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	18.1	15	11.6	15	UG/L
10-Feb-2012	08-Feb-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	14.3	15	14.3	15	UG/L
10-Jan-2012	09-Jan-2012	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	11	15	11	15	UG/L
10-Dec-2011	08-Dec-2011	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Nov-2011	09-Nov-2011	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	15	5	15	UG/L
10-Nov-2011	09-Nov-2011	COPPER, TOTAL RECOVERABLE	NULL	**********	NULL	**********	NULL	NULL	**********	5	NL	5	NL	UG/L
10-Jan-2016	08-Jan-2016	DO	NULL	**********	NULL	**********	NULL	7.5	6	NULL	**********	NULL	**********	MG/L
10-Dec-2015	09-Dec-2015	DO	NULL	**********	NULL	**********	NULL	8.4	6	NULL	**********	NULL	**********	MG/L
10-Nov-2015	06-Nov-2015	DO	NULL	**********	NULL	**********	NULL	7.9	6	NULL	**********	NULL	**********	MG/L
10-Oct-2015	08-Oct-2015	DO	NULL	**********	NULL	**********	NULL	7.3	6	NULL	**********	NULL	**********	MG/L
10-Sep-2015	08-Sep-2015	DO	NULL	**********	NULL	**********	NULL	7.3	6	NULL	**********	NULL	**********	MG/L

10-Aug-2015	10-Aug-2015	DO	NULL	**********	NULL	**********	NULL	7.4	6	NULL	**********	NULL	**********	MG/L
10-Jul-2015	08-Jul-2015	DO	NULL	**********	NULL	**********	NULL	7.4	6	NULL	**********	NULL	**********	MG/L
10-Jun-2015	05-Jun-2015	DO	NULL	**********	NULL	**********	NULL	7.6	6	NULL	**********	NULL	**********	MG/L
10-May-2015	08-May-2015	DO	NULL	**********	NULL	**********	NULL	8.2	6	NULL	**********	NULL	**********	MG/L
10-Apr-2015	08-Apr-2015	DO	NULL	**********	NULL	**********	NULL	6.3	6	NULL	**********	NULL	**********	MG/L
10-Mar-2015	09-Mar-2015	DO	NULL	**********	NULL	**********	NULL	10.1	6	NULL	**********	NULL	**********	MG/L
10-Feb-2015	06-Feb-2015	DO	NULL	**********	NULL	**********	NULL	8.8	6	NULL	**********	NULL	**********	MG/L
10-Jan-2015	09-Jan-2015	DO	NULL	**********	NULL	**********	NULL	7.9	6	NULL	**********	NULL	**********	MG/L
10-Dec-2014	08-Dec-2014	DO	NULL	**********	NULL	**********	NULL	8.1	6	NULL	**********	NULL	**********	MG/L
10-Nov-2014	07-Nov-2014	DO	NULL	**********	NULL	**********	NULL	7.3	6	NULL	**********	NULL	**********	MG/L
10-Oct-2014	09-Oct-2014	DO	NULL	**********	NULL	**********	NULL	7.4	6	NULL	**********	NULL	**********	MG/L
10-Sep-2014	05-Sep-2014	DO	NULL	**********	NULL	**********	NULL	7.5	6	NULL	**********	NULL	**********	MG/L
10-Aug-2014	07-Aug-2014	DO	NULL	**********	NULL	**********	NULL	8.2	6	NULL	**********	NULL	**********	MG/L
10-Jul-2014	08-Jul-2014	DO	NULL	**********	NULL	**********	NULL	6.7	6	NULL	**********	NULL	**********	MG/L
10-Jun-2014	05-Jun-2014	DO	NULL	**********	NULL	**********	NULL	6	6	NULL	**********	NULL	**********	MG/L
10-May-2014	08-May-2014	DO	NULL	**********	NULL	**********	NULL	8.9	6	NULL	**********	NULL	**********	MG/L
10-Apr-2014	07-Apr-2014	DO	NULL	**********	NULL	**********	NULL	6.6	6	NULL	**********	NULL	**********	MG/L
10-Mar-2014	07-Mar-2014	DO	NULL	**********	NULL	**********	NULL	6.2	6	NULL	**********	NULL	**********	MG/L
10-Feb-2014	07-Feb-2014	DO	NULL	**********	NULL	**********	NULL	6.2	6	NULL	**********	NULL	**********	MG/L
10-Jan-2014	10-Jan-2014	DO	NULL	**********	NULL	**********	NULL	8.4	6	NULL	**********	NULL	**********	MG/L
10-Dec-2013	09-Dec-2013	DO	NULL	**********	NULL	**********	NULL	8.4	6	NULL	**********	NULL	**********	MG/L
10-Nov-2013	08-Nov-2013	DO	NULL	**********	NULL	**********	NULL	6	6	NULL	**********	NULL	**********	MG/L
10-Oct-2013	08-Oct-2013	DO	NULL	**********	NULL	**********	NULL	7.4	6	NULL	**********	NULL	**********	MG/L
10-Sep-2013	09-Sep-2013	DO	NULL	**********	NULL	**********	NULL	8.1	6	NULL	**********	NULL	**********	MG/L
10-Aug-2013	09-Aug-2013	DO	NULL	**********	NULL	**********	NULL	7.5	6	NULL	**********	NULL	**********	MG/L
10-Jul-2013	08-Jul-2013	DO	NULL	**********	NULL	**********	NULL	8	6	NULL	**********	NULL	**********	MG/L
10-Jun-2013	07-Jun-2013	DO	NULL	**********	NULL	**********	NULL	7.4	6	NULL	**********	NULL	**********	MG/L
10-May-2013	08-May-2013	DO	NULL	**********	NULL	**********	NULL	8.9	6	NULL	**********	NULL	**********	MG/L
10-Apr-2013	09-Apr-2013	DO	NULL	**********	NULL	**********	NULL	9.7	6	NULL	**********	NULL	**********	MG/L
10-Mar-2013	07-Mar-2013	DO	NULL	**********	NULL	**********	NULL	9.6	6	NULL	**********	NULL	**********	MG/L
10-Feb-2013	08-Feb-2013	DO	NULL	**********	NULL	**********	NULL	8.4	6	NULL	**********	NULL	**********	MG/L
10-Jan-2013	10-Jan-2013	DO	NULL	**********	NULL	**********	NULL	8.7	6	NULL	**********	NULL	**********	MG/L
10-Dec-2012	07-Dec-2012	DO	NULL	**********	NULL	**********	NULL	8.2	6	NULL	**********	NULL	**********	MG/L
10-Nov-2012	07-Nov-2012	DO	NULL	**********	NULL	**********	NULL	6.1	6	NULL	**********	NULL	**********	MG/L
10-Oct-2012	09-Oct-2012	DO	NULL	**********	NULL	**********	NULL	7.1	6	NULL	**********	NULL	**********	MG/L
10-Sep-2012	07-Sep-2012	DO	NULL	**********	NULL	**********	NULL	7	6	NULL	**********	NULL	**********	MG/L
10-Aug-2012	06-Aug-2012	DO	NULL	**********	NULL	**********	NULL	7.6	6	NULL	**********	NULL	**********	MG/L
10-Jul-2012	09-Jul-2012	DO	NULL	**********	NULL	**********	NULL	7.9	6	NULL	**********	NULL	**********	MG/L
10-Jun-2012	08-Jun-2012	DO	NULL	**********	NULL	**********	NULL	7.9	6	NULL	**********	NULL	**********	MG/L
10-May-2012	04-May-2012	DO	NULL	**********	NULL	**********	NULL	8.5	6	NULL	**********	NULL	**********	MG/L
10-Apr-2012	09-Apr-2012	DO	NULL	**********	NULL	**********	NULL	8.3	6	NULL	**********	NULL	**********	MG/L
10-Mar-2012	09-Mar-2012	DO	NULL	**********	NULL	**********	NULL	10.8	6	NULL	**********	NULL	**********	MG/L
10-Feb-2012	08-Feb-2012	DO	NULL	**********	NULL	**********	NULL	9.4	6	NULL	**********	NULL	**********	MG/L
10-Jan-2012	09-Jan-2012	DO	NULL	**********	NULL	**********	NULL	8.6	6	NULL	**********	NULL	**********	MG/L
10-Dec-2011	08-Dec-2011	DO	NULL	**********	NULL	**********	NULL	8.5	6	NULL	**********	NULL	**********	MG/L
10-Nov-2011	09-Nov-2011	DO	NULL	**********	NULL	**********	NULL	7.7	6	NULL	**********	NULL	**********	MG/L
10-Nov-2011	09-Nov-2011	DO	NULL	**********	NULL	**********	NULL	7.7	6	NULL	**********	NULL	**********	MG/L
10-Jan-2016	08-Jan-2016	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	10	126	NULL	**********	N/CML
10-Dec-2015	09-Dec-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	13	126	NULL	**********	N/CML
10-Nov-2015	06-Nov-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	8	126	NULL	**********	N/CML
10-Oct-2015	08-Oct-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	10	126	NULL	**********	N/CML
10-Sep-2015	08-Sep-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	5	126	NULL	**********	N/CML
10-Aug-2015	10-Aug-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	4	126	NULL	**********	N/CML
10-Jul-2015	08-Jul-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	19	126	NULL	**********	N/CML
10-Jun-2015	05-Jun-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	5	126	NULL	**********	N/CML
10-May-2015	08-May-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	7	126	NULL	**********	N/CML
10-Apr-2015	08-Apr-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	10	126	NULL	**********	N/CML
10-Mar-2015	09-Mar-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	3	126	NULL	**********	N/CML
10-Feb-2015	06-Feb-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	3	126	NULL	**********	N/CML
10-Jan-2015	09-Jan-2015	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	6	126	NULL	**********	N/CML
10-Dec-2014	08-Dec-2014	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	13	126	NULL	**********	N/CML
10-Nov-2014	07-Nov-2014	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	14	126	NULL	**********	N/CML
10-Oct-2014	09-Oct-2014	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	13	126	NULL	**********	N/CML
10-Sep-2014	05-Sep-2014	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	14	126	NULL	**********	N/CML
10-Aug-2014	07-Aug-2014	E COLI	NULL	**********	NULL	**********	NULL	NULL	**********	13	126	NULL	**********	N/CML

10-Jul-2014	08-Jul-2014	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	23	126	NULL	*********	N/CML
10-Jun-2014	05-Jun-2014	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	22	126	NULL	*********	N/CML
10-May-2014	08-May-2014	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	25	126	NULL	*********	N/CML
10-Apr-2014	07-Apr-2014	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	24	126	NULL	*********	N/CML
10-Mar-2014	07-Mar-2014	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	20	126	NULL	*********	N/CML
10-Feb-2014	07-Feb-2014	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	57	126	NULL	*********	N/CML
10-Jan-2014	10-Jan-2014	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	19	126	NULL	*********	N/CML
10-Dec-2013	09-Dec-2013	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	7	126	NULL	*********	N/CML
10-Nov-2013	08-Nov-2013	E.COLI	NULL	*********	NULL	*********	NULL	NULL	*********	28	126	NULL	*********	N/CML
10-Oct-2013	08-Oct-2013	E.COLI	NULL	*********	NULL	*********	NULL	NULL	*********	11	126	NULL	*********	N/CML
10-Sep-2013	09-Sep-2013	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	7	126	NULL	*********	N/CML
10-Aug-2013	09-Aug-2013	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	2	126	NULL	*********	N/CML
10-Jul-2013	08-Jul-2013	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	5	126	NULL	*********	N/CML
10-Jun-2013	07-Jun-2013	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	4	126	NULL	*********	N/CML
10-May-2013	08-May-2013	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	4	126	NULL	*********	N/CML
10-Apr-2013	09-Apr-2013	E.COLI	NULL	*********	NULL	*********	NULL	NULL	*********	8	126	NULL	*********	N/CML
10-Mar-2013	07-Mar-2013	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	4	126	NULL	*********	N/CML
10-Feb-2013	08-Feb-2013	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	10	126	NULL	*********	N/CML
10-Jan-2013	10-Jan-2013	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	20	126	NULL	*********	N/CML
10-Dec-2012	07-Dec-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	17	126	NULL	*********	N/CML
10-Nov-2012	07-Nov-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	42	126	NULL	*********	N/CML
10-Oct-2012	09-Oct-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	25	126	NULL	*********	N/CML
10-Sep-2012	07-Sep-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	13	126	NULL	*********	N/CML
10-Aug-2012	06-Aug-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	10	126	NULL	*********	N/CML
10-Jul-2012	09-Jul-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	4	126	NULL	*********	N/CML
10-Jun-2012	08-Jun-2012	E.COLI	NULL	*********	NULL	*********	NULL	NULL	*********	5	126	NULL	*********	N/CML
10-May-2012	04-May-2012	E.COLI	NULL	*********	NULL	*********	NULL	NULL	*********	3	126	NULL	*********	N/CML
10-Apr-2012	09-Apr-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	4	126	NULL	*********	N/CML
10-Mar-2012	09-Mar-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	8	126	NULL	*********	N/CML
10-Feb-2012	08-Feb-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	6	126	NULL	*********	N/CML
10-Jan-2012	09-Jan-2012	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	14	126	NULL	*********	N/CML
10-Dec-2011	08-Dec-2011	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	14	126	NULL	*********	N/CML
10-Nov-2011	09-Nov-2011	E.COLI	NULL	*********	NULL	*********	NULL	NULL	*********	9	126	NULL	*********	N/CML
10-Nov-2011	09-Nov-2011	E COLI	NULL	*********	NULL	*********	NULL	NULL	*********	9	126	NULL	*********	N/CML
10-Jan-2016	08-Jan-2016	FLOW	0.13	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Dec-2015	09-Dec-2015	FLOW	0.09	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Nov-2015	06-Nov-2015	FLOW	0.1	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Oct-2015	08-Oct-2015	FLOW	0.08	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Sep-2015	08-Sep-2015	FLOW	0.08	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Aug-2015	10-Aug-2015	FLOW	0.1	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Jul-2015	08-Jul-2015	FLOW	0.1	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Jun-2015	05-Jun-2015	FLOW	0.09	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-May-2015	08-May-2015	FLOW	0.13	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Apr-2015	08-Apr-2015	FLOW	0.16	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Mar-2015	09-Mar-2015	FLOW	0.09	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Feb-2015	06-Feb-2015	FLOW	0.12	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Jan-2015	09-Jan-2015	FLOW	0.11	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Dec-2014	08-Dec-2014	FLOW	0.09	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Nov-2014	07-Nov-2014	FLOW	0.09	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Oct-2014	09-Oct-2014	FLOW	0.08	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Sep-2014	05-Sep-2014	FLOW	0.08	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Aug-2014	07-Aug-2014	FLOW	0.09	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Jul-2014	08-Jul-2014	FLOW	0.14	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Jun-2014	05-Jun-2014	FLOW	0.16	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-May-2014	08-May-2014	FLOW	0.13	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Apr-2014	07-Apr-2014	FLOW	0.14	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Mar-2014	07-Mar-2014	FLOW	0.17	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Feb-2014	07-Feb-2014	FLOW	0.13	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Jan-2014	10-Jan-2014	FLOW	0.14	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Dec-2013	09-Dec-2013	FLOW	0.083	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Nov-2013	08-Nov-2013	FLOW	0.11	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Oct-2013	08-Oct-2013	FLOW	0.075	0.16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Sep-2013	09-Sep-2013	FLOW	0.073	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Aug-2013	09-Aug-2013	FLOW	0.081	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL
10-Jul-2013	08-Jul-2013	FLOW	0.13	0 16	NULL	*********	MGD	NULL	*********	NULL	*********	NULL	*********	NULL

10-Jun-2013	07-Jun-2013	FLOW	0.1	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-May-2013	08-May-2013	FLOW	0.09	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Apr-2013	09-Apr-2013	FLOW	0.13	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Mar-2013	07-Mar-2013	FLOW	0.12	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Feb-2013	08-Feb-2013	FLOW	0.126	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Jan-2013	10-Jan-2013	FLOW	0.097	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Dec-2012	07-Dec-2012	FLOW	0.094	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Nov-2012	07-Nov-2012	FLOW	0.12	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Oct-2012	09-Oct-2012	FLOW	0.09	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Sep-2012	07-Sep-2012	FLOW	0.08	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Aug-2012	06-Aug-2012	FLOW	0.08	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Jul-2012	09-Jul-2012	FLOW	0.095	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Jun-2012	08-Jun-2012	FLOW	0.11	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-May-2012	04-May-2012	FLOW	0.083	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Apr-2012	09-Apr-2012	FLOW	0.1	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Mar-2012	09-Mar-2012	FLOW	0.087	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Feb-2012	08-Feb-2012	FLOW	0.099	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Jan-2012	09-Jan-2012	FLOW	0.12	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Dec-2011	08-Dec-2011	FLOW	0.1	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Nov-2011	09-Nov-2011	FLOW	0.11	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Nov-2011	09-Nov-2011	FLOW	0.11	0.16	NULL	**********	MGD	NULL	**********	NULL	**********	NULL	**********	NULL
10-Jan-2016	08-Jan-2016	pH	NULL	**********	NULL	**********	NULL	6.2	6	NULL	**********	7	9	SU
10-Dec-2015	09-Dec-2015	pH	NULL	**********	NULL	**********	NULL	6.2	6	NULL	**********	6.9	9	SU
10-Nov-2015	06-Nov-2015	pH	NULL	**********	NULL	**********	NULL	6	6	NULL	**********	7	9	SU
10-Oct-2015	08-Oct-2015	pH	NULL	**********	NULL	**********	NULL	6	6	NULL	**********	7.3	9	SU
10-Sep-2015	08-Sep-2015	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.4	9	SU
10-Aug-2015	10-Aug-2015	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.3	9	SU
10-Jul-2015	08-Jul-2015	pH	NULL	**********	NULL	**********	NULL	6.3	6	NULL	**********	7.5	9	SU
10-Jun-2015	05-Jun-2015	pH	NULL	**********	NULL	**********	NULL	6	6	NULL	**********	7.2	9	SU
10-May-2015	08-May-2015	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.1	9	SU
10-Apr-2015	08-Apr-2015	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.2	9	SU
10-Mar-2015	09-Mar-2015	pH	NULL	**********	NULL	**********	NULL	6.2	6	NULL	**********	7.5	9	SU
10-Feb-2015	06-Feb-2015	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.2	9	SU
10-Jan-2015	09-Jan-2015	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.3	9	SU
10-Dec-2014	08-Dec-2014	pH	NULL	**********	NULL	**********	NULL	6.3	6	NULL	**********	7.3	9	SU
10-Nov-2014	07-Nov-2014	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.2	9	SU
10-Oct-2014	09-Oct-2014	pH	NULL	**********	NULL	**********	NULL	6.3	6	NULL	**********	7.4	9	SU
10-Sep-2014	05-Sep-2014	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.4	9	SU
10-Aug-2014	07-Aug-2014	pH	NULL	**********	NULL	**********	NULL	6.6	6	NULL	**********	7.5	9	SU
10-Jul-2014	08-Jul-2014	pH	NULL	**********	NULL	**********	NULL	7	6	NULL	**********	7.6	9	SU
10-Jun-2014	05-Jun-2014	pH	NULL	**********	NULL	**********	NULL	6.7	6	NULL	**********	7.4	9	SU
10-May-2014	08-May-2014	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.3	9	SU
10-Apr-2014	07-Apr-2014	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.4	9	SU
10-Mar-2014	07-Mar-2014	pH	NULL	**********	NULL	**********	NULL	6.7	6	NULL	**********	7.5	9	SU
10-Feb-2014	07-Feb-2014	pH	NULL	**********	NULL	**********	NULL	6.8	6	NULL	**********	7.7	9	SU
10-Jan-2014	10-Jan-2014	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.3	9	SU
10-Dec-2013	09-Dec-2013	pH	NULL	**********	NULL	**********	NULL	6.6	6	NULL	**********	7.4	9	SU
10-Nov-2013	08-Nov-2013	pH	NULL	**********	NULL	**********	NULL	6.7	6	NULL	**********	7.7	9	SU
10-Oct-2013	08-Oct-2013	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.4	9	SU
10-Sep-2013	09-Sep-2013	pH	NULL	**********	NULL	**********	NULL	6.6	6	NULL	**********	7.5	9	SU
10-Aug-2013	09-Aug-2013	pH	NULL	**********	NULL	**********	NULL	6.6	6	NULL	**********	7.4	9	SU
10-Jul-2013	08-Jul-2013	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.4	9	SU
10-Jun-2013	07-Jun-2013	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.2	9	SU
10-May-2013	08-May-2013	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.6	9	SU
10-Apr-2013	09-Apr-2013	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.3	9	SU
10-Mar-2013	07-Mar-2013	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.6	9	SU
10-Feb-2013	08-Feb-2013	pH	NULL	**********	NULL	**********	NULL	6.3	6	NULL	**********	7.6	9	SU
10-Jan-2013	10-Jan-2013	pH	NULL	**********	NULL	**********	NULL	6.3	6	NULL	**********	7.7	9	SU
10-Dec-2012	07-Dec-2012	pH	NULL	**********	NULL	**********	NULL	6.1	6	NULL	**********	7.6	9	SU
10-Nov-2012	07-Nov-2012	pH	NULL	**********	NULL	**********	NULL	6.2	6	NULL	**********	7.5	9	SU
10-Oct-2012	09-Oct-2012	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.6	9	SU
10-Sep-2012	07-Sep-2012	pH	NULL	**********	NULL	**********	NULL	6.6	6	NULL	**********	7.5	9	SU
10-Aug-2012	06-Aug-2012	pH	NULL	**********	NULL	**********	NULL	6.8	6	NULL	**********	7.7	9	SU
10-Jul-2012	09-Jul-2012	pH	NULL	**********	NULL	**********	NULL	6.7	6	NULL	**********	7.8	9	SU
10-Jun-2012	08-Jun-2012	pH	NULL	**********	NULL	**********	NULL	6.2	6	NULL	**********	7.6	9	SU

10-May-2012	04-May-2012	pH	NULL	**********	NULL	**********	NULL	6.1	6	NULL	**********	7.4	9	SU
10-Apr-2012	09-Apr-2012	pH	NULL	**********	NULL	**********	NULL	6.4	6	NULL	**********	7.2	9	SU
10-Mar-2012	09-Mar-2012	pH	NULL	**********	NULL	**********	NULL	6.2	6	NULL	**********	7.6	9	SU
10-Feb-2012	08-Feb-2012	pH	NULL	**********	NULL	**********	NULL	6.1	6	NULL	**********	6.8	9	SU
10-Jan-2012	09-Jan-2012	pH	NULL	**********	NULL	**********	NULL	6.1	6	NULL	**********	7	9	SU
10-Dec-2011	08-Dec-2011	pH	NULL	**********	NULL	**********	NULL	6.2	6	NULL	**********	7.4	9	SU
10-Nov-2011	09-Nov-2011	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.3	9	SU
10-Nov-2011	09-Nov-2011	pH	NULL	**********	NULL	**********	NULL	6.5	6	NULL	**********	7.3	9	SU
10-Jan-2016	08-Jan-2016	TSS	2.9	12	4.9	18	KG/D	NULL	**********	5	20	6.7	30	MG/L
10-Dec-2015	09-Dec-2015	TSS	2.3	12	3.5	18	KG/D	NULL	**********	6.3	20	9.3	30	MG/L
10-Nov-2015	06-Nov-2015	TSS	3.1	12	4.3	18	KG/D	NULL	**********	7.9	20	9.7	30	MG/L
10-Oct-2015	08-Oct-2015	TSS	2.1	12	2	18	KG/D	NULL	**********	5.9	20	7	30	MG/L
10-Sep-2015	08-Sep-2015	TSS	1.5	12	1.9	18	KG/D	NULL	**********	5.3	20	6.7	30	MG/L
10-Aug-2015	10-Aug-2015	TSS	1.5	12	1.9	18	KG/D	NULL	**********	4.2	20	4.7	30	MG/L
10-Jul-2015	08-Jul-2015	TSS	3.1	12	3.7	18	KG/D	NULL	**********	9	20	12	30	MG/L
10-Jun-2015	05-Jun-2015	TSS	2.8	12	3.8	18	KG/D	NULL	**********	8.8	20	11.3	30	MG/L
10-May-2015	08-May-2015	TSS	4.4	12	7.1	18	KG/D	NULL	**********	8.9	20	12.7	30	MG/L
10-Apr-2015	08-Apr-2015	TSS	7.6	12	13.5	18	KG/D	NULL	**********	12.2	20	20	30	MG/L
10-Mar-2015	09-Mar-2015	TSS	2.8	12	3.2	18	KG/D	NULL	**********	8	20	9.7	30	MG/L
10-Feb-2015	06-Feb-2015	TSS	2.6	12	3.4	18	KG/D	NULL	**********	5.9	20	7.3	30	MG/L
10-Jan-2015	09-Jan-2015	TSS	4.2	12	7.7	18	KG/D	NULL	**********	9.4	20	14.3	30	MG/L
10-Dec-2014	08-Dec-2014	TSS	1.9	12	2.8	18	KG/D	NULL	**********	5.5	20	6.7	30	MG/L
10-Nov-2014	07-Nov-2014	TSS	1.8	12	2.7	18	KG/D	NULL	**********	5.2	20	7.3	30	MG/L
10-Oct-2014	09-Oct-2014	TSS	1.3	12	1.4	18	KG/D	NULL	**********	4	20	4.7	30	MG/L
10-Sep-2014	05-Sep-2014	TSS	1.7	12	2.3	18	KG/D	NULL	**********	5.7	20	7	30	MG/L
10-Aug-2014	07-Aug-2014	TSS	2	12	2.5	18	KG/D	NULL	**********	6.3	20	8	30	MG/L
10-Jul-2014	08-Jul-2014	TSS	5.8	12	9.2	18	KG/D	NULL	**********	9.9	20	12.7	30	MG/L
10-Jun-2014	05-Jun-2014	TSS	6.9	12	7.9	18	KG/D	NULL	**********	11.5	20	13.7	30	MG/L
10-May-2014	08-May-2014	TSS	11	12	8.8	18	KG/D	NULL	**********	17.1	20	16.3	30	MG/L
10-Apr-2014	07-Apr-2014	TSS	4.1	12	5.3	18	KG/D	NULL	**********	8.2	20	10	30	MG/L
10-Mar-2014	07-Mar-2014	TSS	6.1	12	12.4	18	KG/D	NULL	**********	8.9	20	14	30	MG/L
10-Feb-2014	07-Feb-2014	TSS	7.7	12	10.9	18	KG/D	NULL	**********	19	20	29.7	30	MG/L
10-Jan-2014	10-Jan-2014	TSS	9.8	12	17.9	18	KG/D	NULL	**********	19.7	20	31.3	30	MG/L
10-Dec-2013	09-Dec-2013	TSS	4.1	12	5.9	18	KG/D	NULL	**********	12.3	20	18	30	MG/L
10-Nov-2013	08-Nov-2013	TSS	3.4	12	3.8	18	KG/D	NULL	**********	10.1	20	12.7	30	MG/L
10-Oct-2013	08-Oct-2013	TSS	1	12	1.2	18	KG/D	NULL	**********	3.7	20	4.3	30	MG/L
10-Sep-2013	09-Sep-2013	TSS	0.71	12	1.1	18	KG/D	NULL	**********	2.6	20	4	30	MG/L
10-Aug-2013	09-Aug-2013	TSS	1	12	1.2	18	KG/D	NULL	**********	3	20	3.7	30	MG/L
10-Jul-2013	08-Jul-2013	TSS	3.1	12	5.7	18	KG/D	NULL	**********	6.4	20	8.3	30	MG/L
10-Jun-2013	07-Jun-2013	TSS	2.6	12	4.1	18	KG/D	NULL	**********	6.4	20	8.7	30	MG/L
10-May-2013	08-May-2013	TSS	3.4	12	4	18	KG/D	NULL	**********	10	20	12	30	MG/L
10-Apr-2013	09-Apr-2013	TSS	4.9	12	6.7	18	KG/D	NULL	**********	9.2	20	12	30	MG/L
10-Mar-2013	07-Mar-2013	TSS	3.6	12	3.8	18	KG/D	NULL	**********	7.3	20	9.3	30	MG/L
10-Feb-2013	08-Feb-2013	TSS	6.3	12	6.8	18	KG/D	NULL	**********	10.8	20	18	30	MG/L
10-Jan-2013	10-Jan-2013	TSS	2.8	12	4	18	KG/D	NULL	**********	8.3	20	11.7	30	MG/L
10-Dec-2012	07-Dec-2012	TSS	5.1	12	4.7	18	KG/D	NULL	**********	11.9	20	11	30	MG/L
10-Nov-2012	07-Nov-2012	TSS	5.3	12	2.6	18	KG/D	NULL	**********	8.6	20	8	30	MG/L
10-Oct-2012	09-Oct-2012	TSS	2.4	12	3.4	18	KG/D	NULL	**********	7.1	20	8.3	30	MG/L
10-Sep-2012	07-Sep-2012	TSS	1.6	12	1.9	18	KG/D	NULL	**********	5.4	20	6.3	30	MG/L
10-Aug-2012	06-Aug-2012	TSS	1.2	12	1.4	18	KG/D	NULL	**********	4	20	4.3	30	MG/L
10-Jul-2012	09-Jul-2012	TSS	1.1	12	1.3	18	KG/D	NULL	**********	3.8	20	4.3	30	MG/L
10-Jun-2012	08-Jun-2012	TSS	2.5	12	4.4	18	KG/D	NULL	**********	6.3	20	7.7	30	MG/L
10-May-2012	04-May-2012	TSS	2	12	2.1	18	KG/D	NULL	**********	6.5	20	7.3	30	MG/L
10-Apr-2012	09-Apr-2012	TSS	3.7	12	3.5	18	KG/D	NULL	**********	9.5	20	9.7	30	MG/L
10-Mar-2012	09-Mar-2012	TSS	2.2	12	2.7	18	KG/D	NULL	**********	6.4	20	8.7	30	MG/L
10-Feb-2012	08-Feb-2012	TSS	3.5	12	6.8	18	KG/D	NULL	**********	10.5	20	18.7	30	MG/L
10-Jan-2012	09-Jan-2012	TSS	5	12	8.5	18	KG/D	NULL	**********	11.2	20	14	30	MG/L
10-Dec-2011	08-Dec-2011	TSS	4.8	12	6.5	18	KG/D	NULL	**********	11.1	20	14.3	30	MG/L
10-Nov-2011	09-Nov-2011	TSS	3.4	12	5.3	18	KG/D	NULL	**********	8.3	20	9.3	30	MG/L
10-Nov-2011	09-Nov-2011	TSS	3.4	12	5.3	18	KG/D	NULL	**********	8.3	20	9.3	30	MG/L

Attachment 8 – Copper Limit Calculations (STATS)

5/16/2016 2:49:45 PM

Facility = Town of Hamilton
Chemical = Copper
Chronic averaging period = 4
WLAa = 15
WLAc = 9.6
Q.L. = 5.8
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 52
Expected Value = 8.16825
Variance = 9.15018
C.V. = 0.370327
97th percentile daily values = 15.3796
97th percentile 4 day average = 10.8664
97th percentile 30 day average= 9.07674
< Q.L. = 23
Model used = delta lognormal

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 13.5871867964713
Average Weekly limit = 13.5871867964713
Average Monthly LImit = 13.5871867964713

The data are:

7.1
5
10
11.7
8.4
5.4
8.2
6.6
5.6
5
6
5
16.7
5
5
5.5
9.5
5.4
7.7

5
5
5
5
12.8
5
7.6
6.4
8
7.8
5
6.8
8.6
5
9.6
5
10.3
13.5
10
5
5
10.4
13.7
5
10.4
9.8
10.3
18.1
14.3
11
5
5
5

Attachment 9 – Dissolved Oxygen Model

2/2

MEMORANDUM

VIRGINIA STATE WATER CONTROL BOARD
Office of Water Resources Management
P.O. Box 11143
2111 N. Hamilton Street Richmond, Virginia 23230

Subject: Stream Analysis - Town of Hamilton (Loudoun Co)
To: C. A. Sale - NRO
From: Martin G. Ferguson, Jr. Martin G. Ferguson, Jr.
Date: November 23, 1988
Copies: B. R. Tuxford

We have reviewed the stream analysis for the proposed increase of the Town of Hamilton's discharge to the tributary of the South Fork of Catoctin Creek dated 11/18/88.

The modeling is acceptable and the model is approved for application. We have no problem with the permit limits proposed.

Please note that this model has <u>not</u> been checked for conformance with applicable areawide or 303(e) basinwide water quality management plans. This model <u>must</u> be in conformance with such plans, and it is the Regional Office's responsibility to insure such conformance.

MEMORANDUM

VIRGINIA WATER CONTROL BOARD
NORTHERN REGIONAL OFFICE
5515 Cherokee Avenue, Suite 404 Alexandria, Virginia 22312

SUBJECT: Loudoun County; Town of Hamilton STP Request to Increase Flow From 0.08 mgd to 0.16 mgd

TO: Martin Ferguson, OWRM

FROM: John Hopkins, NRO

DATE: November 18, 1988

COPIES: File

Please find attached a stream analysis for OWRM review and comment.

We have received a request from the Town of Hamilton to increase the flow of their facility from 0.08 mgd to 0.16 mgd.

The existing facility is an activated sludge process (design flow of 0.08 mgd) followed by a polishing pond. The plant was upgraded to this status in 1975. Discharge limits were determined by a stream model dated June 11, 1974. A copy of that model is enclosed for reference.

The plant discharges to an unnamed dry ditch which is tributary to the South Fork of Catoctin Creek, Potomac River Basin, Potomac River Subbasin, Section 10b, Class III, Special Standards: SR-2. A map is attached and it includes parts of the Purcellville topo and Waterford topo.

The 1974 model consisted of the following elements:

(1) a dry ditch receiving stream (Segment 1)
(2) a discharge from the Town of Hamilton STP to Segment 1
(3) the background variables of the South Fork of Catoctin Creek (Segment 2)
(4) the mass balance of Segments 1 & 2.

I was able to duplicate the old model (from 1974) using Version 3.03 (March 1988) of the SWCB stream model floppy disk program. A copy of that duplication is attached in the form of two (2) model runs. The first model run was made at "0" feet elevation and matches the results of the model of 1974. The second model run was made at actual elevation of the stp and receiving stream and matches the previous results as well. The third run is an allocation run for the proposed flow increase to 0.16 mgd. The only difference in variables between the calibration run at elevation and the allocation run is the flow of the discharge.

Results of the allocation run indicate appropriate proposed discharge limits at a flow of 0.16 mgd to be: BOD_5 and TSS of 20 mg/l, DO of 6.0 mg/l and no TKN limit.

MODEL SIMULATION FOR THE TOWN OF [redacted] TP DISCHARGE TO
UNNAMED TRIBUTARY OF S. FORK OF CAT[redacted] CREEK

THE BACKGROUND CONDITIONS ARE:

FLOW= 0.0000 MGD D.O.= 0.000 MG/L CBODu= 0.00 MG/L NBODu= 0.00 MG/L – dry ditch

OUTPUT WILL BE GENERATED EVERY 0.10 MILE FROM THE BEGINNING OF A SEGMENT

THE VARIABLES FOR SECTION 1 ARE:

SEGMENT LENGTH = 1.60 MI VELOCITY = 9.818 MI/D
TEMP. = 30.0 °C ELEV = 0.00 FT SATURATION D.O. = 7.720 MG/L
ka = 1.000 /DAY Kr = 0.200 /DAY Kn = 0.000 /DAY

CALIBRATION RUN AT "0" ELEVATION

The k rates shown are at 20 degrees C. The model corrects them.

FOR THE DISCHARGE AT THE BEGINNING OF THE SEGMENT:

FLOW= 0.0800 MGD D.O.= 6.00 MG/L CBODu= 31.20 MG/L NBODu= 0.00 MG/L

THE RESULTS FOR SECTION 1 ARE:

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (mg/l)	CBODu (mg/l)	NBODu (mg/l)
0.000	0.000	6.000	31.200	0.000
0.100	0.100	5.922	31.100	0.000
0.200	0.200	5.846	30.999	0.000
0.300	0.300	5.771	30.900	0.000
0.400	0.400	5.697	30.800	0.000
0.500	0.500	5.624	30.701	0.000
0.600	0.600	5.553	30.602	0.000
0.700	0.700	5.483	30.504	0.000
0.800	0.800	5.414	30.405	0.000
0.900	0.900	5.346	30.308	0.000
1.000	1.000	5.280	30.210	0.000
1.100	1.100	5.215	30.113	0.000
1.200	1.200	5.150	30.016	0.000
1.300	1.300	5.087	29.919	0.000
1.400	1.400	5.025	29.823	0.000
1.500	1.500	4.965	29.727	0.000

THE VARIABLES FOR SECTION 2 ARE:

SEGMENT LENGTH = 1.50 MI VELOCITY = 9.818 MI/D
TEMP. = 30.0 °C ELEV = 0.00 FT SATURATION D.O. = 7.720 MG/L
Ka = 2.000 /DAY Kr = 0.180 /DAY Kn = 0.000 /DAY

The k rates shown are at 20 degrees C. The model corrects them.

FOR THE TRIBUTARY AT THE BEGINNING OF THE SEGMENT:

FLOW= 0.0627 MGD D.O.= 6.08 MG/L CBODu= 3.00 MG/L NBODu= 0.00 MG/L

THE RESULTS FOR SECTION 2 ARE:

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (mg/l)	CBODu (mg/l)	NBODu (mg/l)
0.000	1.600	5.423	17.930	0.000
0.100	1.700	5.430	17.878	0.000
0.200	1.800	5.437	17.826	0.000
0.300	1.900	5.444	17.774	0.000
0.400	2.000	5.452	17.723	0.000
0.500	2.100	5.459	17.672	0.000
0.600	2.200	5.466	17.620	0.000
0.700	2.300	5.473	17.569	0.000
0.800	2.400	5.480	17.518	0.000
0.900	2.500	5.487	17.468	0.000
1.000	2.600	5.494	17.417	0.000
1.100	2.700	5.501	17.367	0.000
1.200	2.800	5.508	17.316	0.000
1.300	2.900	5.514	17.266	0.000
1.400	3.000	5.521	17.216	0.000
1.500	3.100	5.528	17.166	0.000

...ersions of S. FORK O... ...IN CREEK

THE BACKGROUND CONDITIONS ARE:

FLOW= 0.0000 MGD D.O.= 0.000 MG/L CBODu= 0.00 MG/L NBODu= 0.00 MG/L

OUTPUT WILL BE GENERATED EVERY 0.10 MILE FROM THE BEGINNING OF A SEGMENT

THE VARIABLES FOR SECTION 1 ARE:

SEGMENT LENGTH = 1.60 MI VELOCITY = 9.818 MI/D
TEMP. = 30.0 °C ELEV = 460.00 FT SATURATION D.O. = 7.596 MG/L
Ka = 1.000 /DAY Kr = 0.200 /DAY Kn = 0.000 /DAY

CALIBRATED RUN AT CLOUDY

The k rates shown are at 20 degrees C. The model corrects them.

FOR THE DISCHARGE AT THE BEGINNING OF THE SEGMENT:

FLOW= 0.0800 MGD D.O.= 6.00 MG/L CBODu= 31.20 MG/L NBODu= 0.00 MG/L

THE RESULTS FOR SECTION 1 ARE:

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (mg/l)	CBODu (mg/l)	NBODu (mg/l)
0.000	0.000	6.000	31.200	0.000
0.100	0.100	5.921	31.100	0.000
0.200	0.200	5.843	30.999	0.000
0.300	0.300	5.766	30.900	0.000
0.400	0.400	5.691	30.800	0.000
0.500	0.500	5.617	30.701	0.000
0.600	0.600	5.544	30.602	0.000
0.700	0.700	5.472	30.504	0.000
0.800	0.800	5.402	30.405	0.000
0.900	0.900	5.333	30.308	0.000
1.000	1.000	5.265	30.210	0.000
1.100	1.100	5.198	30.113	0.000
1.200	1.200	5.133	30.016	0.000
1.300	1.300	5.068	29.919	0.000
1.400	1.400	5.005	29.823	0.000
1.500	1.500	4.943	29.727	0.000
1.600				

THE VARIABLES FOR SECTION 2 ARE:

SEGMENT LENGTH = 1.50 MI VELOCITY = 9.810 MI/D
TEMP. = 30.0 °C FLOW = [illegible] CFS SATURATION D.O. = 7.615 MG/L
ka = 2.000 /DAY kr = 0.180 /DAY kn = 0.000 /DAY

The k rates shown are at 20 degrees C. The model corrects them.

FOR THE TRIBUTARY AT THE BEGINNING OF THE SEGMENT:

FLOW= 0.0627 MGD D.O.= 6.00 MG/L CBODu= 3.00 MG/L NBODu= 0.00 MG/L

THE RESULTS FOR SECTION 2 ARE:

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (mg/l)	CBODu (mg/l)	NBODu (mg/l)
0.000	1.600	5.373	17.930	0.000
0.100	1.700	5.379	17.878	0.000
0.200	1.800	5.385	17.826	0.000
0.300	1.900	5.391	17.774	0.000
0.400	2.000	5.397	17.723	0.000
0.500	2.100	5.402	17.672	0.000
0.600	2.200	5.408	17.620	0.000
0.700	2.300	5.414	17.569	0.000
0.800	2.400	5.420	17.518	0.000
0.900	2.500	5.426	17.468	0.000
1.000	2.600	5.432	17.417	0.000
1.100	2.700	5.437	17.367	0.000
1.200	2.800	5.443	17.316	0.000
1.300	2.900	5.449	17.266	0.000
1.400	3.000	5.455	17.216	0.000
1.500	3.100	5.461	17.166	0.000

UNNAMED TRIBUTARY OF S. FORK OF CATOCTI

THE BACKGROUND CONDITIONS ARE:

FLOW= 0.0000 MGD D.O.= 0.000 MG/L CBODu= 0.00 MG/L NBODu= 0.00 MG/L

OUTPUT WILL BE GENERATED EVERY 0.10 MILE FROM THE BEGINNING OF A SEGMENT

THE VARIABLES FOR SECTION 1 ARE:

SEGMENT LENGTH = 1.60 MI VELOCITY = 3.818 MI/D
TEMP. = 30.0 °C ELEV = 460.00 FT SATURATION D.O. = 7.596 MG/L
Ka = 1.000 /DAY Kr = 0.200 /DAY Kn = 0.000 /DAY

The k rates shown are at 20 degrees C. The model corrects them.

FOR THE DISCHARGE AT THE BEGINNING OF THE SEGMENT:

FLOW= 0.1600 MGD D.O.= 6.00 MG/L CBODu= 26.00 MG/L NBODu= 0.00 MG/L

THE RESULTS FOR SECTION 1 ARE:

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (mg/l)	CBODu (mg/l)	NBODu (mg/l)
0.000	0.000	6.000	26.000	0.000
0.100	0.100	5.937	25.916	0.000
0.200	0.200	5.876	25.833	0.000
0.300	0.300	5.815	25.750	0.000
0.400	0.400	5.756	25.667	0.000
0.500	0.500	5.697	25.584	0.000
0.600	0.600	5.640	25.502	0.000
0.700	0.700	5.583	25.420	0.000
0.800	0.800	5.528	25.338	0.000
0.900	0.900	5.473	25.256	0.000
1.000	1.000	5.420	25.175	0.000
1.100	1.100	5.367	25.094	0.000
1.200	1.200	5.315	25.013	0.000
1.300	1.300	5.265	24.933	0.000
1.400	1.400	5.215	24.852	0.000
.500	1.500	5.166	24.772	0.000

dry ditch

ALLOCATION RUN

THE VARIABLES FOR SECTION 2 ARE:

SEGMENT LENGTH = 1.50 MI VELOCITY = 3.018 MI/D
TEMP. = 30.0 °C ELEV = 390.00 FT SATURATION D.O. = 7.615 MG/L
Ka = 2.000 /DAY Kr = 0.180 /DAY Kn = 0.000 /DAY

South fork Coatuctin creek

The k rates shown are at 20 degrees C. The model corrects them.

FOR THE TRIBUTARY AT THE BEGINNING OF THE SEGMENT:

FLOW= 0.0627 MGD D.O.= 6.00 MG/L CBODu= 3.00 MG/L NBODu= 0.00 MG/L

THE RESULTS FOR SECTION 2 ARE:

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (mg/l)	CBODu (mg/l)	NBODu (mg/l)
0.000	1.600	5.366	18.585	0.000
0.100	1.700	5.370	18.531	0.000
0.200	1.800	5.375	18.478	0.000
0.300	1.900	5.379	18.424	0.000
0.400	2.000	5.383	18.371	0.000
0.500	2.100	5.387	18.317	0.000
0.600	2.200	5.392	18.264	0.000
0.700	2.300	5.396	18.211	0.000
0.800	2.400	5.401	18.159	0.000
0.900	2.500	5.405	18.106	0.000
1.000	2.600	5.410	18.054	0.000
1.100	2.700	5.414	18.001	0.000
1.200	2.800	5.419	17.949	0.000
1.300	2.900	5.423	17.897	0.000
1.400	3.000	5.428	17.845	0.000
1.500	3.100	5.433	17.793	0.000

Attachment 10 – Public Notice

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

PUBLIC COMMENT PERIOD: June 30, 2016 to July 29, 2016

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board.

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Town of Hamilton, P.O. Box 130, Hamilton, VA 20159, VA0020974

NAME AND ADDRESS OF FACILITY: Town of Hamilton Sewage Treatment Plant, 104 North Rogers Street, Hamilton, VA 20159

PROJECT DESCRIPTION: The Town of Hamilton has applied for a reissuance of a permit for the public Town of Hamilton Sewage Treatment Plant. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 0.16 million gallons per day into a water body. Sludge from the treatment process will be disposed at the Loudoun County Landfill. The facility proposes to treated sewage in an unnamed tributary to the South Fork Catoctin Creek in Loudoun County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, biochemical oxygen demand, total suspended solids, dissolved oxygen, *E. coli*, ammonia, and total recoverable copper. The permit requires that the facility monitors and reports: flow, TKN, nitrate + nitrite, total nitrogen, total phosphorus, and total hardness.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Caitlin Shipman
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3859 E-mail: caitlin.shipman@deq.virginia.gov